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# Abalone Resurvey in the Southeast Queen Charlotte Islands, June 1987

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# ABALONE RESURVEY IN THE SOUTHEAST QUEEN CHARLOTTE ISLANDS, JUNE 1987

by

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# INTRODUCTION

Stock assessment of the northern abalone (Haliotis kamtschatkana) in British Columbia currently consists of surveys of abalone habitat which provide an index of abundance. The original estimate of annual production of abalone (Breen 1980) provided a basis for the annual quotas set in 1979 at 500,000 lb (226.8 mt). As stock estimates were revised, the overall quota (divided into 26 individual vessel quotas) was reduced in subsequent years (Breen 1983). The history of abalone management is discussed in Fedorenko and Sprout (1982), Bates (1984), Farlinger and Bates (1985), Breen (1986) and Farlinger and Thomas (in prep). In the recent past, no further stock estimates have been made and the annual quota continued to decline until 1985, under the assumption that a sustainable fishing level could be found. Since 1985, the annual quota has remained at 104,000 lb (47.2 mt). Any reduction or maintenance of the quota has been supported by the surveys of commercial and non-commercial abalone beds. These surveys provide an index of abundance of legal sized abalone (No./$m^2$). The evidence for stabilization of the abalone population, or at least a halt to the decline, has been apparent only in recent surveys (Farlinger and Bates 1986).

The east coast of the Queen Charlotte Islands (Area 2E, Fig. 1) has been a major fishing area for abalone in British Columbia (Fig. 2). Other important abalone fishing areas have included the outer Central Coast (Estevan Group, Area 6) and more recently, the north coast of the Queen Charlotte Islands (Area 1). Areas in the south coast have supported smaller fisheries. The first indications that abalone numbers may have stabilized were noted in a 1985 resurvey of the Estevan Group (Farlinger and Bates 1986) where an index of abundance similar to that in 1983 (Boutillier et al. 1984) was observed in that area. The present survey in the southeast Queen Charlotte Islands was intended to reassess since the 1984 survey (Boutillier et al. 1985), the abundance index in this area that had shown only declines to date. Once again, current anecdotal information for this area from fishermen and Fishery Officers, suggested a greater abundance of abalone than in recent years.

In this report, abalone landings are expressed in pounds and metric tonnes (1 mt = 1,000 kg) for comparative purposes. Legal sized abalone are defined by a shell length of >100 mm, pre-recruits by 94 - 101 mm shell length and new recruits by 102 - 107 mm shell length.

# METHODS

The survey was carried out by six divers, three from Fisheries Operations Branch, two from the Pacific Biological Station and one commercial diver whose vessel "M.V. Glory" was chartered for the survey. The Fishery patrol vessel "FPV Kitimat II" was the supporting vessel.

Majority of sampling sites (Fig. 1) were selected by re-locating sites from the 1984 survey (Boutillier et al. 1985) in order to compare directly past and present abundances of abalone in Area 2E. These sites in turn had been selected at high density locations based on previous surveys. In

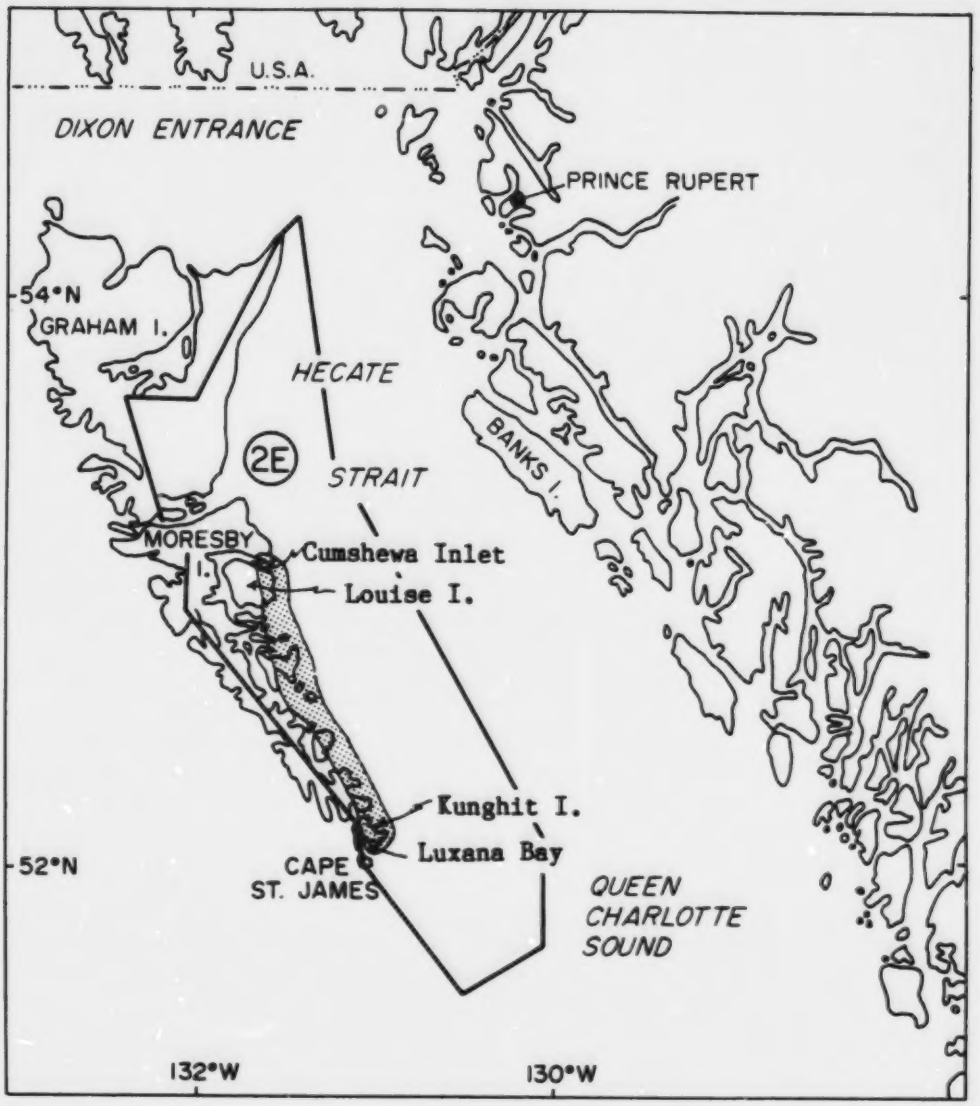


Fig. 1. Range of the June 1987 northern abalone (Haliotis kamtschatkana) survey area along the southeast shore of the Queen Charlotte Islands (Area 2E). Survey sites ranged from Cumshewa Inlet, north of Louise Island, southward to Luxana Bay, Kunghit Island.

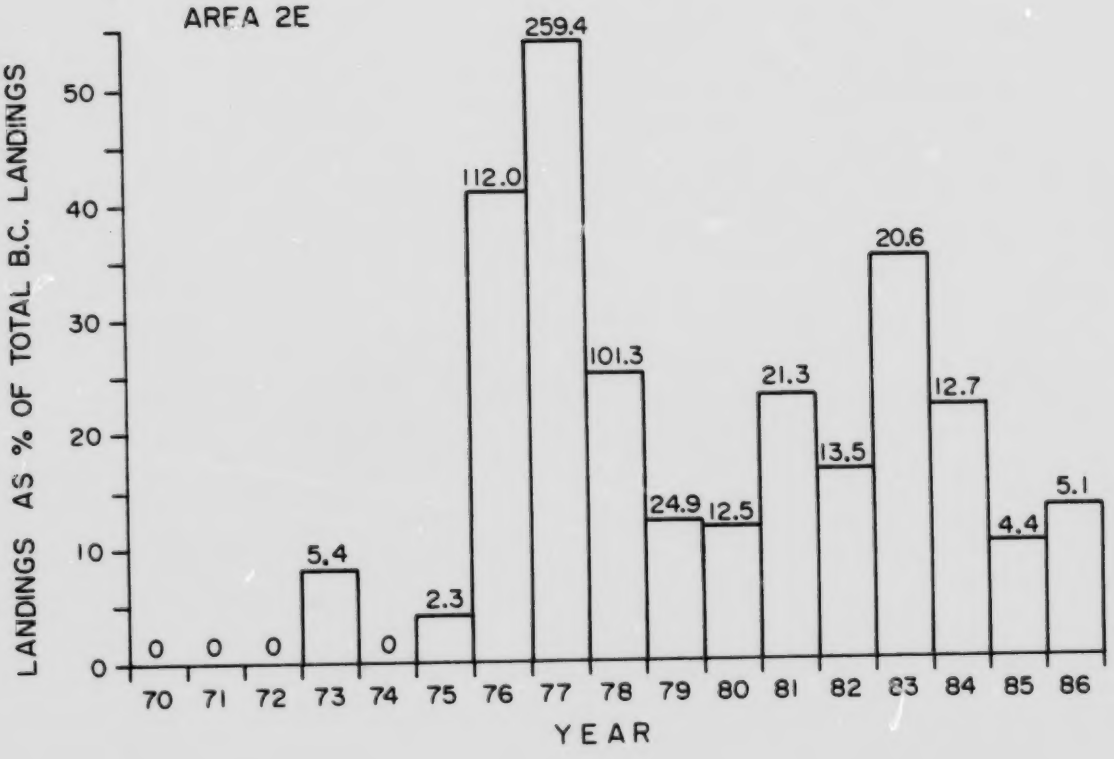


**Fig. 2. Annual landings of Haliotis kamtschatkana in Area 2E as percentage of total B.C. landings, 1970 - 1986. Numbers at column tops give actual landings (mt) for Area 2E each year.**

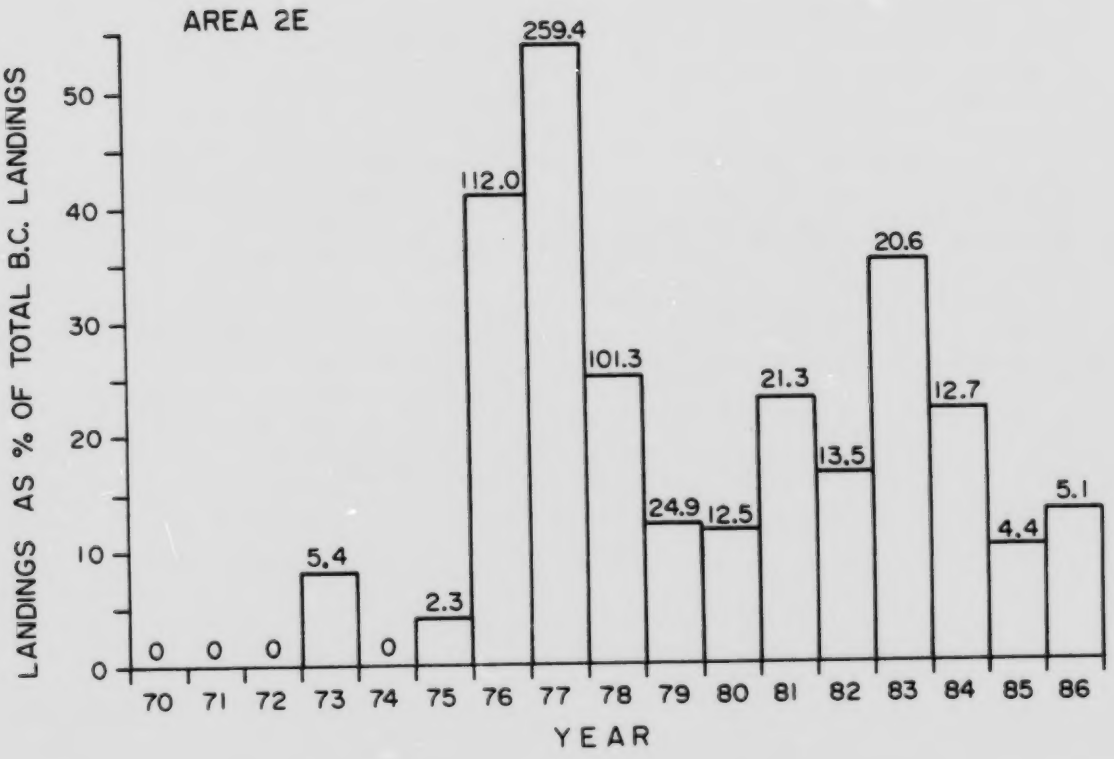


Fig. 2. Annual landings of Haliotis kamtschatkana in Area 2E as percentage of total B.C. landings, 1970 - 1986. Numbers at column tops give actual landings (mt) for Area 2E each year.

addition, several new sites were sampled in 1987 to develop baseline data in these areas for future reference. The selection of the new sites was purposely influenced by the opinion of the fisherman participating in the survey, and represented areas where he would look to harvest abalone based on his experience, knowledge of the area, and local features. Additional four sites were surveyed for information purposes in Cumshewa Inlet; this area has remained largely unfished by any user group since 1978, after supporting major fisheries in 1976 and 1977.

In re-locating sites from previous surveys, the diving team relied on a set of field notes and charts, as well as the experience of those divers involved in previous surveys (4 of the 6 divers). Each site was located using surface landmarks.

The sampling techniques followed the procedures described by Breen and Adkins (1979). At each site, the topography, substrate type, site exposure and dominant algae were visually identified and the percentage vegetation cover estimated and recorded. Abalone density was estimated by collecting and counting all abalone found within a 1 $m^2$ metal quadrat placed on the bottom in a standard 16-quadrat pattern. This pattern consisted of four transects running seaward and parallel to each other, and separated by 4 m; four quadrats were sampled along each transect at 1 m, 3 m, 5 m and 7 m. Prior to sampling at a given site, the top of the abalone zone was determined by the minimum depth at which abalone were sighted during the first swim upslope from the dive entry point. The first quadrat was then placed at the same depth as, but 5 m from this point (this approach was used to reduce bias that may occur in first quadrat selection due to presence or absence of abalone).

Within each quadrat, all kelp plants that obscured vision were cut and removed. Two separate collections and enumerations of abalone were made within each quadrat, one for exposed and one for cryptic abalone. The exposed abalone were those found without moving rocks, while the cryptic abalone were those found by turning over and examining all moveable rocks. All collected abalone were measured for maximum shell length to the nearest mm. Sampling was abandoned at some sites due to poor diving conditions or when no abalone were found in the first eight quadrats.

Results were compared where appropriate to past surveys.

## RESULTS

A total of 77 sites were sampled in 1987 of which 69 had data useable for analysis (Table 1). Of these 69 sites, 63 were common to the 1984 survey (Boutillier et al. 1985), and 58 were common to these and earlier surveys (Breen and Adkins 1979, 1981). Table 1 shows the total and legal abalone densities at each comparable site in the 1979, 1984 and 1987 surveys. Appendix 1 provides a description of the diving sites surveyed in 1987, in terms of location, site exposure, substrate type, slope, algal cover, and quadrat density of abalone and other dominant animal species.

Table 1. Total and legal densities of Haliotis kamtschatkana by sample site, sub-area and site status for 1979, 1984 and 1987 abalone surveys in Area 2E.

| SITE | SUB-AREA | SITE STATUS[a] | 1979 (No./m²) TOTAL | 1979 (No./m²) LEGAL | 1984 (No./m²) TOTAL | 1984 (No./m²) LEGAL | 1987 (No./m²) TOTAL | 1987 (No./m²) LEGAL |
|---|---|---|---|---|---|---|---|---|
| 1 | 19 | 1 | 1.63 | 0.31 | 1.06 | 0.13 | 1.31 | 0.19 |
| 2 | 19 | 1 | 2.38 | 0.90 | 0.38 | 0.13 | 1.19 | 0.13 |
| 3 | 19 | 1 | 0.75 | 0.28 | 0.38 | 0.25 | 0.63 | 0.06 |
| 4 | 17 | 1 | *[b] | * | 0.88 | 0.00 | 1.06 | 0.06 |
| 5 | 17 | 1 | * | * | 0.00 | 0.00 | * | * |
| 6 | 17 | 1 | * | * | 0.44 | 0.38 | 0.00 | 0.00 |
| 7 | 17 | 1 | * | * | 0.19 | 0.13 | 0.44 | 0.00 |
| 8 | 17 | 1 | * | * | 0.19 | 0.00 | * | * |
| 9 | 17 | 1 | * | * | 0.50 | 0.06 | * | * |
| 10 | 17 | 1 | 1.06 | 0.06 | 0.75 | 0.06 | 0.69 | 0.31 |
| 11 | 17 | 1 | 0.19 | 0.06 | 0.00 | 0.00 | 0.19 | 0.00 |
| 12 | 17 | 1 | 0.00 | 0.00 | 0.19 | 0.06 | 0.25 | 0.13 |
| 13 | 17 | 1 | 2.31 | 0.00 | 0.31 | 0.00 | * | * |
| 14 | 17 | 1 | 2.31 | 0.93 | 0.56 | 0.06 | 0.63 | 0.00 |
| 15 | 17 | 1 | 3.31 | 0.13 | 0.50 | 0.00 | 0.44 | 0.00 |
| 16 | 17 | 1 | 2.44 | 0.19 | 0.06 | 0.00 | * | * |
| 17 | 17 | 1 | 1.19 | 0.00 | 0.06 | 0.00 | 0.88 | 0.00 |
| 18 | 17 | 1 | 1.44 | 0.44 | 0.81 | 0.38 | 0.06 | 0.06 |
| 19 | 15 | 1 | 1.00 | 0.00 | 0.00 | 0.00 | 0.56 | 0.00 |
| 20 | 15 | 1 | 1.13 | 0.00 | 1.63 | 0.00 | 0.06 | 0.00 |
| 21 | 15 | 1 | 0.94 | 0.19 | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 | 15 | 1 | 1.63 | 0.00 | 0.19 | 0.00 | 0.00 | 0.00 |
| 23 | 15 | 1 | 1.13 | 0.11 | 0.63 | 0.25 | 0.63 | 0.00 |
| 24 | 15 | 1 | 0.81 | 0.44 | 0.75 | 0.06 | 1.13 | 0.19 |
| 25 | 15 | 1 | 2.25 | 0.11 | 0.81 | 0.31 | * | * |
| 26 | 15 | 1 | 0.63 | 0.56 | 1.94 | 0.44 | 2.31 | 0.81 |
| 27 | 15 | 1 | 0.63 | 0.13 | 0.00 | 0.00 | 0.06 | 0.06 |
| 28 | 15 | 1 | 2.88 | 0.06 | 1.06 | 0.00 | 1.13 | 0.00 |
| 29 | 15 | 1 | 0.94 | 0.00 | 0.63 | 0.00 | 0.38 | 0.00 |
| 30 | 14 | 1 | 3.31 | 0.00 | 1.19 | 0.00 | 0.44 | 0.00 |
| 31 | 14 | 1 | 1.75 | 0.00 | 0.56 | 0.31 | 1.00 | 0.69 |
| 32 | 14 | 1 | 5.63 | 0.44 | 0.00 | 0.00 | 0.50 | 0.00 |
| 33 | 14 | 1 | 3.06 | 1.13 | 0.81 | 0.31 | 1.38 | 0.44 |
| 34 | 14 | 1 | 5.94 | 0.25 | 0.94 | 0.19 | 0.81 | 0.06 |
| 35 | 14 | 1 | 0.31 | 0.00 | 0.38 | 0.31 | 0.50 | 0.13 |
| 36 | 12 | 2 | 2.44 | 0.00 | 0.00 | 0.00 | 0.44 | 0.00 |
| 37 | 11 | 1 | 1.13 | 0.00 | 0.00 | 0.00 | 0.81 | 0.00 |
| 38 | 11 | 1 | 2.44 | 0.31 | 1.00 | 0.00 | 0.69 | 0.06 |
| 39 | 11 | 1 | 5.31 | 0.00 | 1.81 | 0.00 | 1.19 | 0.00 |
| 40 | 11 | 1 | 1.00 | 0.00 | 0.13 | 0.00 | 0.06 | 0.00 |
| 41 | 11 | 1 | 0.25 | 0.00 | 0.06 | 0.06 | 0.06 | 0.00 |
| 42 | 12 | 2 | 16.63 | 1.19 | 0.06 | 0.00 | 0.94 | 0.13 |
| 43 | 12 | 2 | 9.38 | 0.47 | 0.31 | 0.00 | 0.81 | 0.00 |
| 44 | 11 | 1 | 5.94 | 0.06 | 0.13 | 0.00 | 0.44 | 0.13 |
| 45 | 11 | 1 | 4.25 | 0.13 | 0.75 | 0.19 | 0.63 | 0.06 |

(Table 1 cont'd)

| SITE | SUB-AREA | SITE STATUS[a] | 1979 (No./m²) TOTAL | 1979 (No./m²) LEGAL | 1984 (No./m²) TOTAL | 1984 (No./m²) LEGAL | 1987 (No./m²) TOTAL | 1987 (No./m²) LEGAL |
|---|---|---|---|---|---|---|---|---|
| 46 | 11 | 2 | 7.06 | 0.00 | 0.56 | 0.00 | 4.00 | 0.00 |
| 48 | 11 | 1 | 3.75 | 0.56 | 1.19 | 0.38 | 0.81 | 0.13 |
| 49 | 11 | 1 | 1.81 | 1.63 | 0.50 | 0.38 | 0.94 | 0.75 |
| 50 | 11 | 2 | 0.63 | 0.57 | 1.19 | 0.75 | 0.94 | 0.44 |
| 51 | 11 | 1 | 0.75 | 0.67 | 0.00 | 0.00 | 0.44 | 0.44 |
| 52 | 11 | 1 | 8.90 | 0.00 | 1.94 | 0.00 | * | * |
| 53 | 11 | 2 | 8.13 | 1.22 | 0.19 | 0.00 | 0.75 | 0.00 |
| 54 | 11 | 2 | 0.63 | 0.00 | 0.81 | 0.06 | 0.75 | 0.38 |
| 55 | 11 | 2 | 5.88 | 3.54 | 0.88 | 0.06 | 2.69 | 0.25 |
| 56 | 11 | 2 | 7.25 | 0.36 | 1.75 | 0.13 | 1.13 | 0.50 |
| 57 | 11 | 2 | 2.63 | 0.13 | 1.00 | 0.00 | 0.25 | 0.00 |
| 58 | 11 | 2 | 3.38 | 0.13 | 0.06 | 0.00 | 0.56 | 0.00 |
| 59 | 8 | 1 | 1.44 | 0.36 | 0.88 | 0.13 | 1.19 | 0.69 |
| 60 | 8 | 1 | *[b] | * | 1.38 | 0.38 | 0.69 | 0.44 |
| 61 | 8 | 1 | 3.06 | 0.75 | 0.31 | 0.19 | 0.06 | 0.00 |
| 62 | 8 | 1 | * | * | 0.56 | 0.25 | 1.06 | 0.25 |
| 63 | 8 | 1 | 1.44 | 0.19 | 0.13 | 0.00 | 0.25 | 0.00 |
| 64 | 8 | 1 | 2.19 | 1.38 | 0.06 | 0.00 | 0.75 | 0.63 |
| 65 | 7 | 3 | 1.06 | 0.05 | 0.13 | 0.00 | 0.50 | 0.13 |
| 66 | 7 | 3 | 0.63 | 0.31 | 0.13 | 0.06 | 0.25 | 0.13 |
| 67 | 7 | 3 | 0.94 | 0.14 | 0.00 | 0.00 | 0.56 | 0.19 |
| 68 | 7 | 3 | 1.13 | 0.38 | 0.19 | 0.00 | 1.19 | 0.25 |
| 69 | 7 | 3 | 3.88 | 0.39 | 0.06 | 0.00 | 0.25 | 0.06 |
| 70 | 7 | 3 | 3.63 | 0.54 | 0.31 | 0.06 | 0.25 | 0.00 |
| 71 | 32 | 1 | * | * | * | * | 0.31 | 0.31 |
| 72 | 15 | 1 | * | * | * | * | 1.00 | 0.88 |
| 73 | 8 | 1 | * | * | * | * | 1.13 | 1.06 |
| 74 | 8 | 1 | * | * | * | * | 0.13 | 0.13 |
| 75 | 3 | 2 | * | * | * | * | 0.44 | 0.44 |
| 76 | 3 | 2 | * | * | * | * | 0.13 | 0.06 |
| 77 | 8 | 2 | * | * | * | * | * | * |
| 78 | 8 | 2 | * | * | * | * | 1.50 | 1.50 |

[a] Site status: 1-open, 2-closed, 3-recently closed (since 1984).
[b] *Site not surveyed.

A comparative summary of the results from the 1984 and 1987 surveys is presented in Table 2. Numbers will change slightly from table to table as the total useable sites sampled in 1987 (n=69), the 1984/1987 comparable sites (n=63) and the 1979/1984/1987 comparable sites (n=58) are considered. Mean total abalone density, legal sized abalone density and recruit numbers have not changed appreciably in the 1984 to 1987 period (Table 2). Therefore, no strong evidence exists for a recovery to the relatively high 1978–79 abalone levels after the 75–82% decline noted in 1984 (Boutillier et al. 1985). Examination of the distribution of abalone densities over the 58 sites common to the three surveys indicated a large decrease to 1984, but also showed a slight increase since then (Fig. 3). This trend is substantiated by the pattern in "zero sites" and "sites with legal sized abalone" observed in the 1979, 1984 and 1987 surveys (Table 3).

The shell length of abalone sampled in 1987 averaged 77.0 mm for the total abalone, 80.8 mm for the exposed abalone and 52.9 mm for the cryptic abalone (Fig. 4). Size data for comparable sites in 1984 and 1987 surveys (Fig. 5) showed a slightly greater proportion of legal sized abalone in 1987 and a somewhat greater overall mean shell length for the abalone sampled that year (72.5 mm) compared to 1984 (69.8 mm).

The survey area was subdivided into eight arbitrary sections (A–H, Fig. 6) and shell length frequency histograms were constructed for each section (Fig. 7). The Cumshewa Inlet showed a major discrepancy in size data among sections, with 97% of that sample composed of legal sized abalone (0.90 legal sized abalone/$m^2$). Previous surveys in Cumshewa Inlet also indicated a large number of legal sized abalone (Adkins and Stefanson 1977, Breen and Adkins 1979, Bates, pers. comm.) but juveniles were present in very small numbers in all but the 1978–79 survey (Breen and Adkins 1979). The smallest proportion of legal sized abalone was observed in the lower Juan Perez Sound (section E) and in the two southernmost sections (G and H).

Mean total density of abalone over all 69 useable sites in the 1987 survey was 0.75/$m^2$ (Table 4). Comparing the densities of exposed and cryptic abalone, the exposed abalone had considerably greater total density (0.65/$m^2$ vs 0.10/$m^2$ ) and legal sized density (0.198/$m^2$ vs 0.004/$m^2$) (Table 4). The cryptic abalone contributed only 14% (n=115) to the total 1987 sample. The length frequency histograms (Figs. 4 and 5) also showed that legal sized and recruiting abalone comprised a greater proportion of the exposed sample (30%) than of the cryptic sample (3%).

The four new sites sampled in 1987 in Area 2E (1 at Rose Inlet, 1 at Skincuttle Inlet, 2 near Tanu Island) showed lower than average mean total density of abalone (0.47/$m^2$ compared to 0.75/$m^2$ in the total sample, Table 4), but higher than average legal sized density of abalone (0.42/$m^2$ compared to 0.201/$m^2$ in the total sample, Table 4).

During the 1987 survey in Area 2E, mean densities of total, recruiting and legal sized abalone were compared in sites open and closed to the commercial fishery (Table 5). No significant differences were apparent between the open and closed sites ($p>0.05$). Visual examination of length frequency histograms for Area 2E based on 57 sites common to the 1984 and 1987 surveys and unchanged in status for that period, suggested a greater number of small (<60mm) abalone in closed compared to open sites in both years (Fig. 8). However, in comparing mean total and legal densities for 1984 and 1987 surveys (Table 6), no differences between surveys were apparent using the Wilcoxon signed-ranks test.

Table 2. Comparison of numbers and mean densities of Haliotis kamtschatkana between the 1984 and 1987 surveys in Area 2E, based on 63 useable sites (1,008 $m^2$ quadrats) common to both surveys. Data are presented separately for exposed, cryptic, pre-recruit, new recruit and legal sized abalone.

| Abalone | Shell length (mm) | 1984 | | 1987 | | Mean Density Changes | |
|---|---|---|---|---|---|---|---|
| | | No. | No./$m^2$ | No. | No./$m^2$ | No./$m^2$ | % |
| Total | | 694 | 0.689 | 758 | 0.752 | +0.063 | ( 9.1) |
| Exposed | | 563 | 0.559 | 645 | 0.640 | +0.081 | (14.5) |
| Cryptic | | 131 | 0.130 | 113 | 0.112 | -0.018 | (13.8) |
| Pre-recruit | 94-101 | 68 | 0.068 | 56 | 0.056 | -0.012 | (17.6) |
| New Recruit | 102-107 | 32 | 0.032 | 52 | 0.052 | +0.020 | (62.5)[a] |
| Legal sized | >100 | 105 | 0.104 | 152 | 0.151 | +0.047 | (45.7)[a] |

[a]Due to small sample size, the actual difference between the two years is not significant.

Table 3. Number of "zero sites" and number of "legal abalone sites" in the 58 sites common to the 1979, 1984 and 1987 surveys in Area 2E.

| | No. zero sites[a] | No. legal abalone sites[b] |
|---|---|---|
| 1979 | 1 | 41 |
| 1984 | 7 | 26 |
| 1987 | 2 | 32 |

[a]"zero sites" - sites in which no abalone were found.

[b]"legal abalone sites" - sites in which one or more legal sized abalone were found.

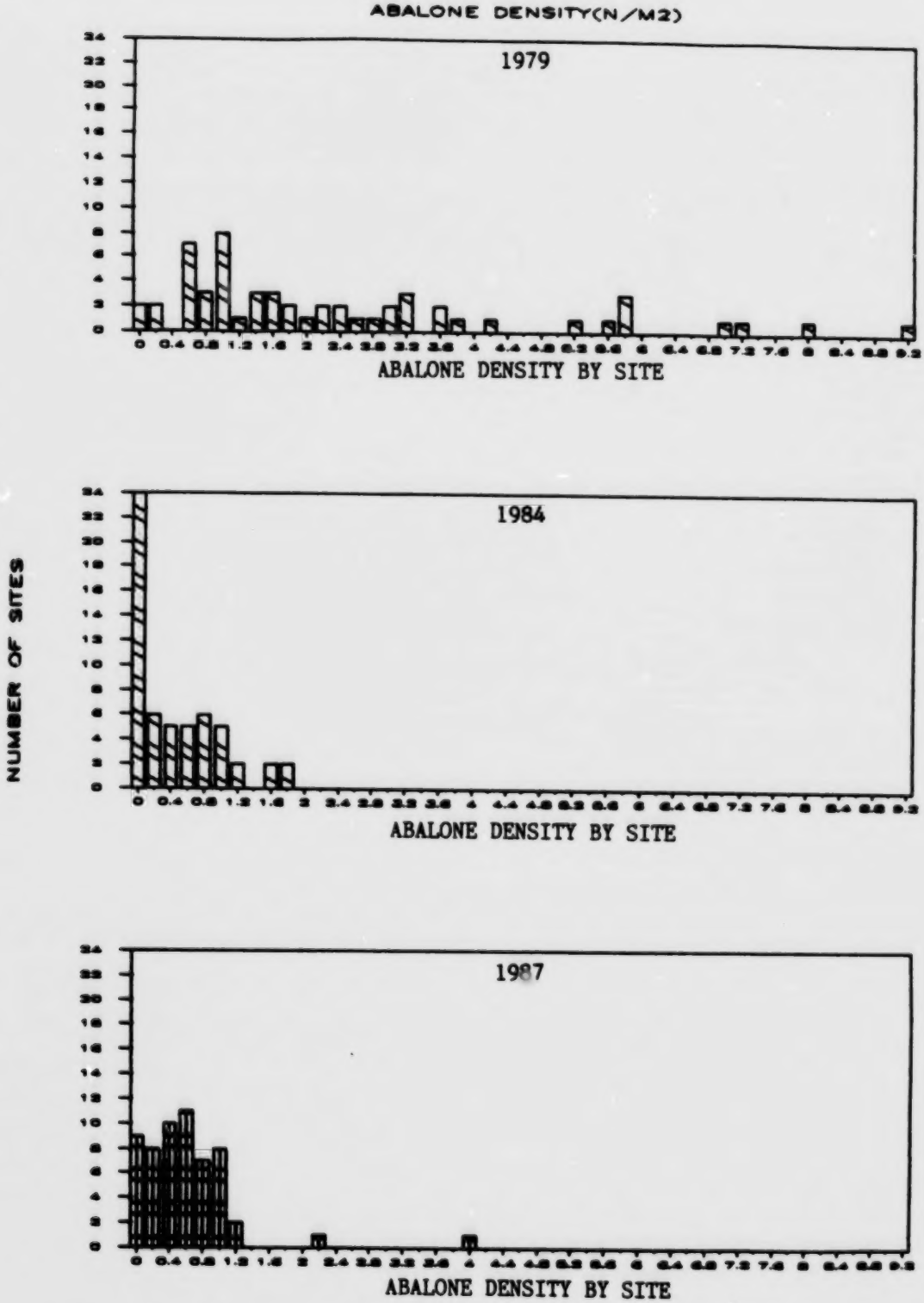


Fig. 3. Frequency distribution of abalone densities at 58 comparable sites in Area 2E for 1979, 1984 and 1987.

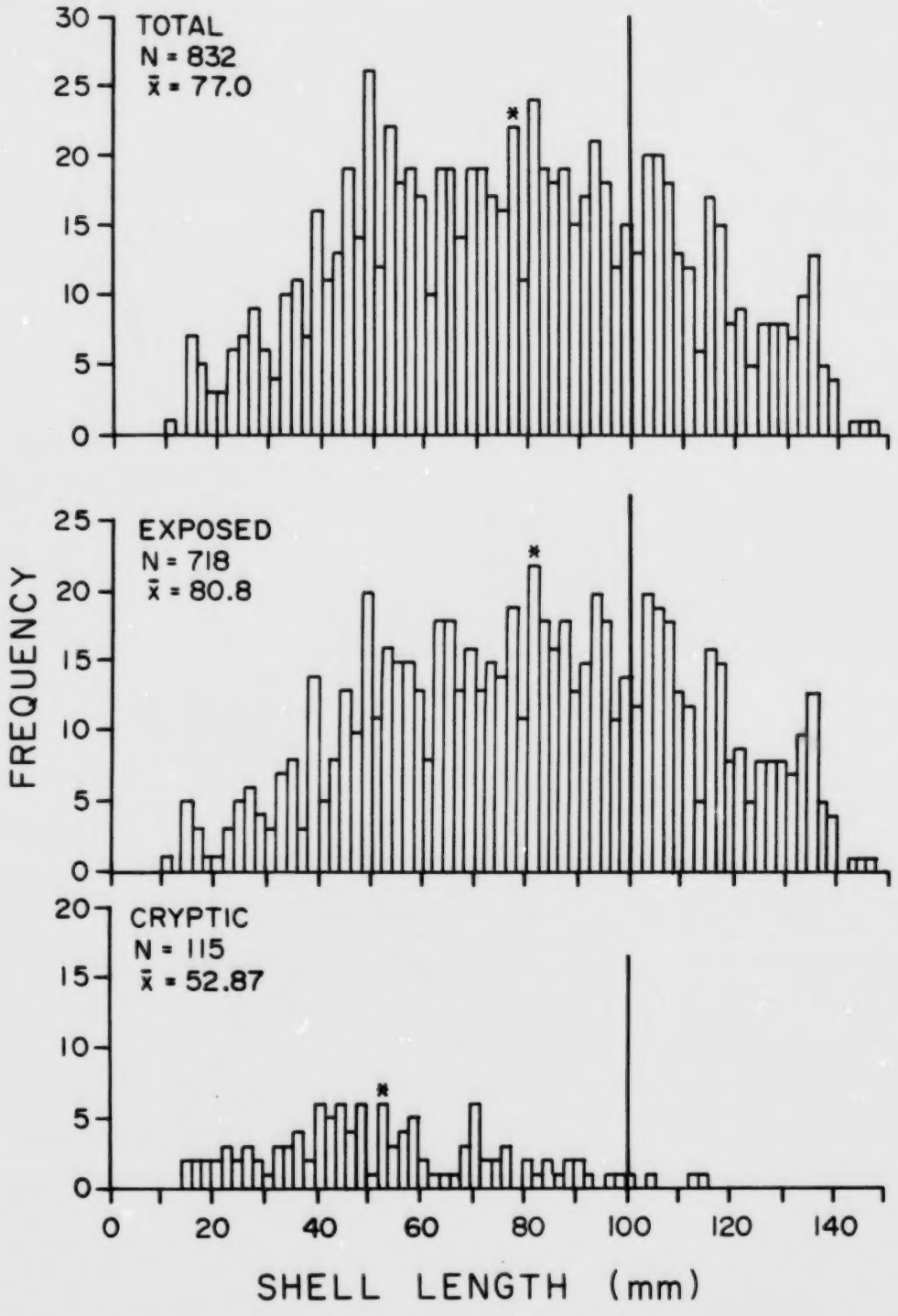


Fig. 4. Shell length frequency histograms for Haliotis kamtschatkana measured at all sites during the 1987 survey in Area 2E; total abalone sampled (top), total exposed abalone sampled (middle), total cryptic abalone sampled (bottom). (*indicates mean shell length, solid line at 100 mm indicates legal size.)

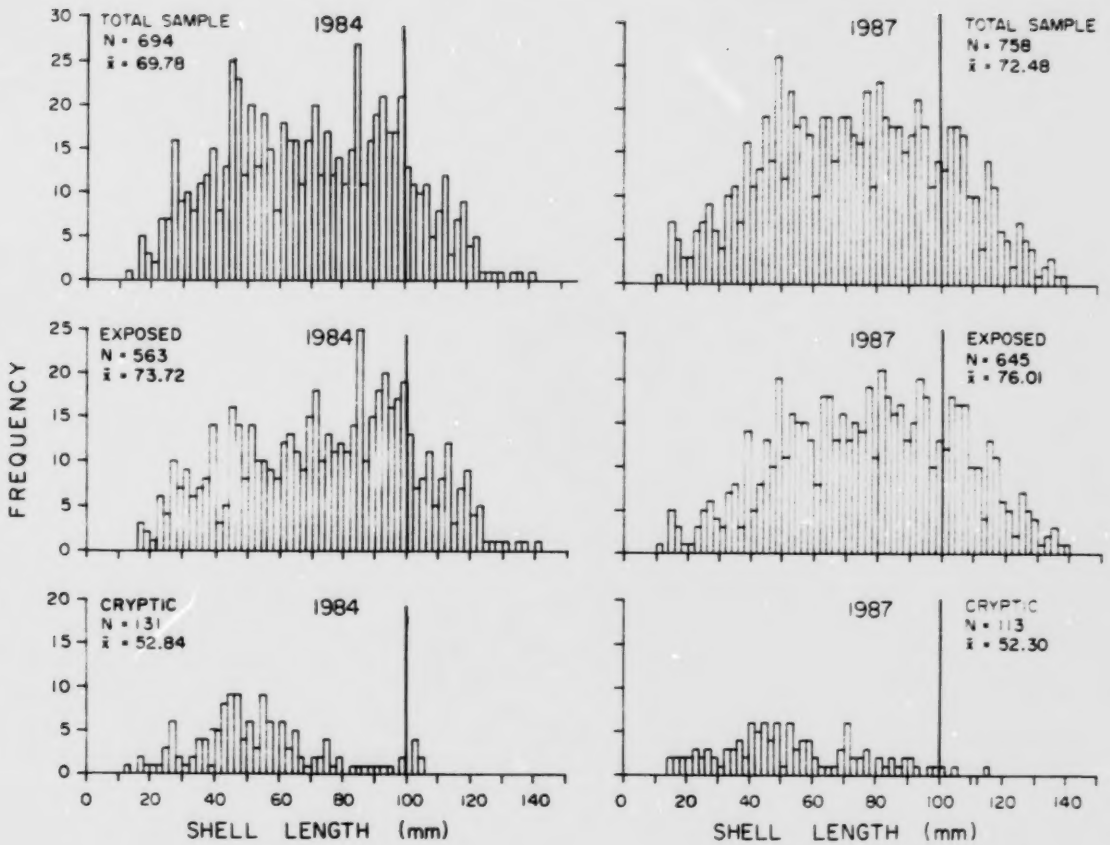


**Fig. 5. Comparison of shell length frequency histograms for Haliotis kamtschatkana measured at 63 comparable sites during the 1984 and 1987 surveys in Area 2E; total abalone sampled (top), total exposed abalone sampled (middle), total cryptic abalone sampled (bottom). (Solid line at 100 mm indicates legal size.)**

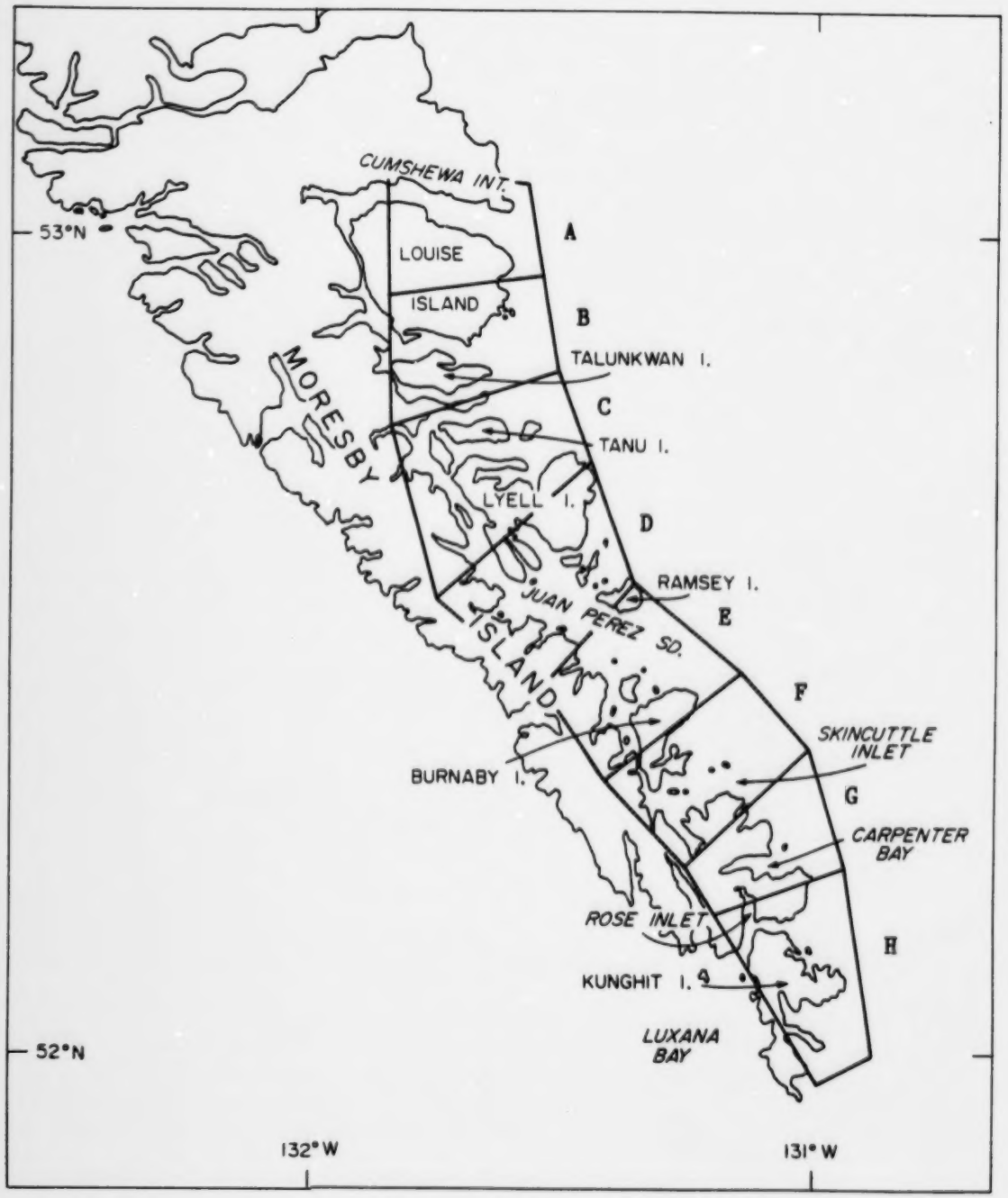


Fig. 6. Moresby Island and adjacent islands over which the 1987 Haliotis kamtschatkana survey took place; noteworthy place names and the eight arbitrary divisions (A - H) of the survey area are also shown.

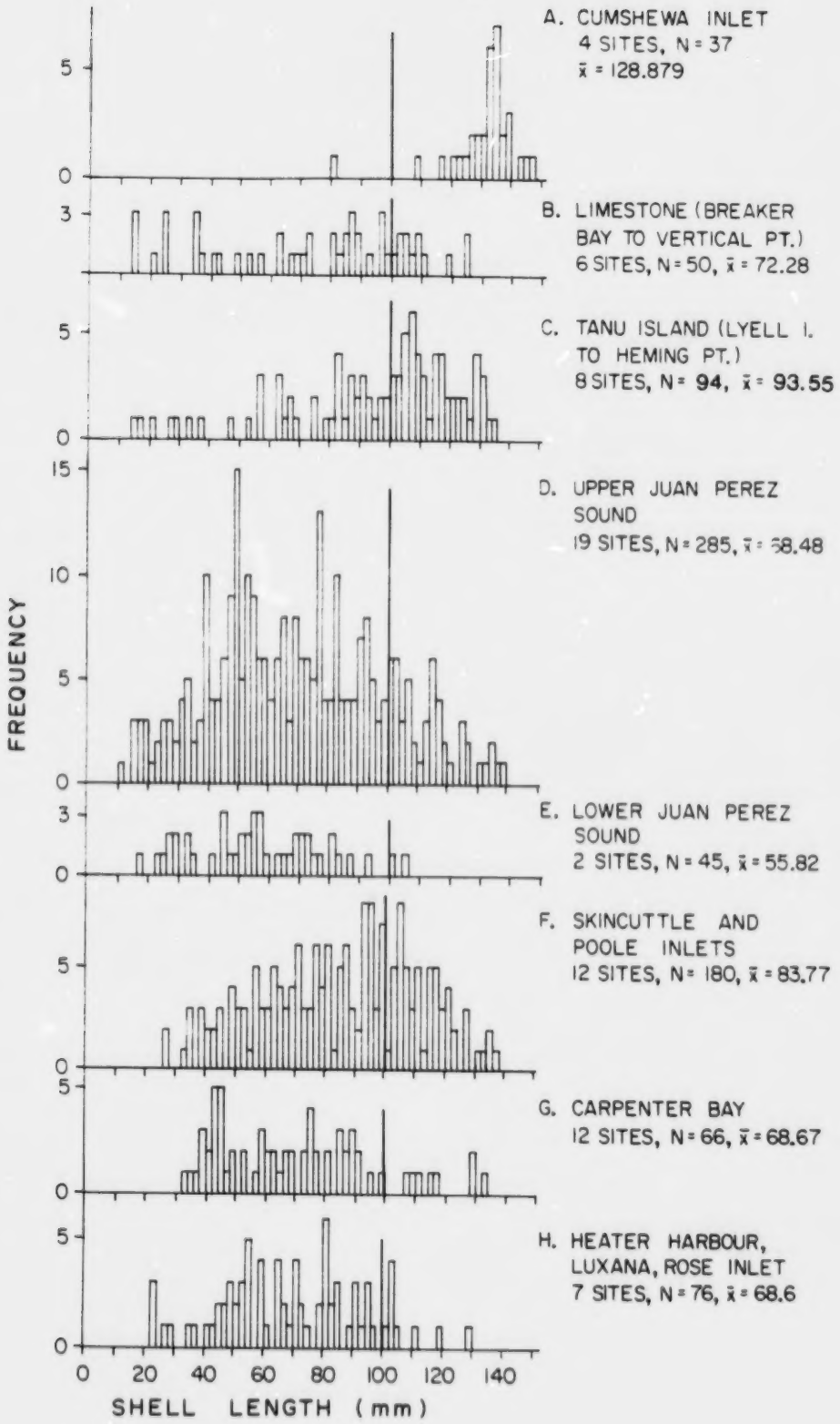
A. CUMSHEWA INLET
4 SITES, N = 37
x̄ = 128.879
B. LIMESTONE (BREAKER BAY TO VERTICAL PT.)
6 SITES, N = 50, x̄ = 72.28
C. TANU ISLAND (LYELL I. TO HEMING PT.)
8 SITES, N = 94, x̄ = 93.55
D. UPPER JUAN PEREZ SOUND
19 SITES, N = 285, x̄ = 58.48
E. LOWER JUAN PEREZ SOUND
2 SITES, N = 45, x̄ = 55.82
F. SKINCUTTLE AND POOLE INLETS
12 SITES, N = 180, x̄ = 83.77
G. CARPENTER BAY
12 SITES, N = 66, x̄ = 68.67
H. HEATER HARBOUR, LUXANA, ROSE INLET
7 SITES, N = 76, x̄ = 68.6
FREQUENCY
SHELL LENGTH (mm)
0 20 40 60 80 100 120 140

**Fig. 7. Shell length frequency histograms for Haliotis kamtschatkana from the eight arbitrary divisions (A - H) of the survey area in 1987. (Solid line at 100 mm indicates legal size.)**

Table 4. Numbers and mean densities of total, recruiting and legal sized Haliotis kamtschatkana in Area 2E based on 69 useable sites (1104 $m^2$ quadrats) in the 1987 survey. Exposed and cryptic abalone are presented separately.

| Abalone | Shell length (mm) | Total Sample (Exposed and Cryptic) | | Exposed | | Cryptic | |
|---|---|---|---|---|---|---|---|
| | | No. | No./$m^2$ | No. | No./$m^2$ | No. | No./$m^2$ |
| Total | | 832 | 0.754 | 717 | 0.650 | 115 | 0.104 |
| Pre-recruit | 94-101 | 58 | 0.053 | 55 | 0.050 | 3 | 0.003 |
| New Recruit | 102-107 | 58 | 0.053 | 57 | 0.052 | 1 | 0.001 |
| Legal sized | >100 | 222 | 0.201 | 218 | 0.198 | 4 | 0.004 |

Table 5. Comparison of numbers and mean densities of total, recruiting and legal sized Haliotis kamtschatkana in open and closed sites in Area 2E during the 1987 survey. Data are based on 63 useable sites (1,008 $m^2$ quadrats) in which the status of open or closed has remained constant between 1984 and 1987.

| Abalone | Shell length (mm) | Closed Sites (N=14) | | Open Sites (N=49) | | Two Sample t-test |
|---|---|---|---|---|---|---|
| | | No. | Mean density (No./$m^2$) | No. | Mean density (No./$m^2$) | |
| Total | | 265 | 1.095 | 517 | 0.639 | 0.14 NS[a] |
| Pre-recruit | 94-101 | 7 | 0.031 | 42 | 0.054 | 0.40 NS |
| New Recruit | 102-107 | 12 | 0.054 | 41 | 0.052 | 0.96 NS |
| Legal sized | >100 | 59 | 0.264 | 151 | 0.189 | 0.53 NS |

[a]NS - Not Significant ($p>0.05$).

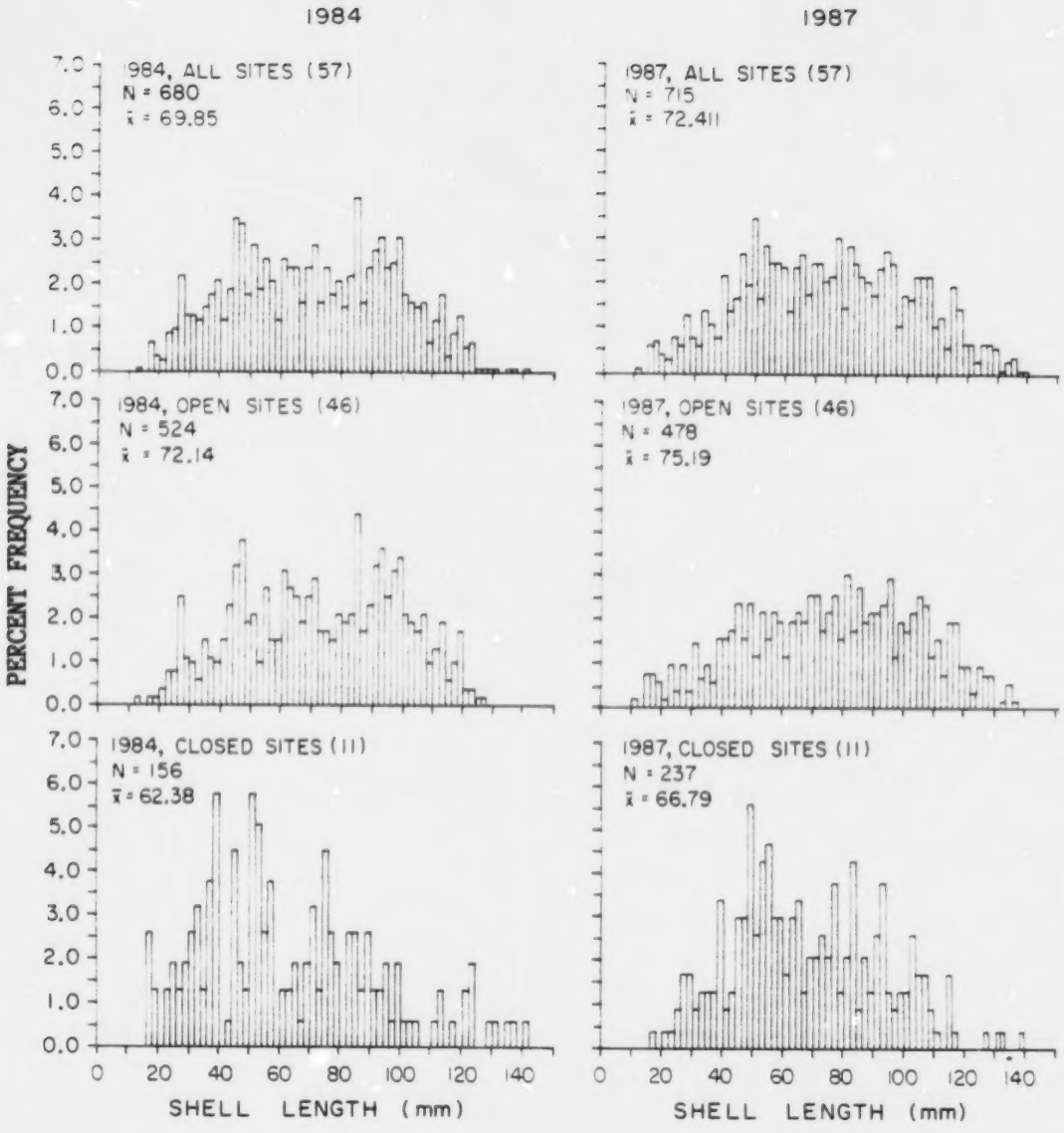


Fig. 8. Comparison of shell length frequency (percentage) histograms for Haliotis kamtschatkana sampled in comparable open (N = 46) and closed (N = 11) sites during the 1984 and 1987 abalone surveys in Area 2E; total abalone sampled in all the sites (top), total abalone sampled in open sites (middle), total abalone sampled in closed sites (bottom).

Table 6. Comparison of mean total and legal densities of Haliotis kamtschatkana according to open or closed areas in 1984 and 1987 surveys in Area 2E. A total of 57 sites (912 $m^2$ quadrats) were unchanged in status between 1984 and 1987.

| Area status[a] | Type of mean density | No. Sites | Mean Density (No./$m^2$) 1984 | 1987 | Difference in means (No./$m^2$) | Wilcoxon signed-ranks test[b] |
|---|---|---|---|---|---|---|
| All Areas | Total | 57 | 0.6061 | 0.7444 | +0.138 | 0.2220 NS[c] |
| All Areas | Legal | 57 | 0.1125 | 0.1509 | +0.038 | 0.6667 NS |
| Open | Total | 46 | 0.6030 | 0.6341 | +0.031 | 0.5043 NS |
| Open | Legal | 46 | 0.1176 | 0.1500 | +0.032 | 0.9657 NS |
| Closed | Total | 11 | 0.6190 | 1.2050 | +0.586 | 0.2122 NS |
| Closed | Legal | 11 | 0.0909 | 0.1545 | +0.064 | 0.5327 NS |

[a] Open and closed designations were based on 57 sites which have retained closure status since prior to 1984.
6 sites which were closed in the interim were not included in the analysis.
[b] Wilcoxon is a signed-rank test on the densities at each site between years.
[c] NS = Not Significant ($p>0.05$).

# DISCUSSION

The results from the 1987 survey show no appreciable changes in the index of abundance or in recruitment for Area 2E since 1984. Neither legal sized nor total abalone densities have changed. The results indicate that stocks remain at low levels compared with abundances in the 1970s. However, there is an apparent halt to the decline noted in previous surveys. A survey conducted in 1985 in Area 6 (Central Coast) produced results similar to above (Farlinger and Bates 1986).

Processes which may have had some bearing on the decline and present low levels of abalone abundance include recruitment overfishing, natural fluctuations related to environmental conditions and/or sub-legal mortality associated with harvesting (Boutillier et al. 1985). Breen (1980) suggested that abalone recruitment to the fishery was lower than replacement levels before the 7-10 years required to detect an effect of the fishery (for practical purposes, an assumption was made that the fishery began in 1976). The lack of change between 1984 and 1987 supports the conclusion that fishing may not be the primary cause of recruitment failure.

Comparison between areas open and closed to commercial abalone fishing support the above conclusions. Once again, the lack of differences between the open and closed areas in the 1987 survey, or between the 1984 and 1987 surveys suggests that the closed areas have been subject to the same abundance regime as the open areas. It is noteworthy that "closed" areas remain open to recreational and Indian food fisheries which have been considered negligible but are, in fact, not known.

The final area sampled, Cumshewa Inlet, is unique. Large tidal flows in this productive area probably contribute to the local growth of abalone. In 1976-77, this site alone yielded 160,000 lb (72.6 mt) of reported landings in the B.C. fishery. The entire inlet has been closed since 1978. However, even in 1978, Breen and Adkins (1979) reported large numbers of abalone in those sites where abalone were present, and a "top-heavy" population (49-75% over the then 102 mm legal size). An examination of several sites in Cumshewa Inlet in 1983 (Bates, pers. comm.) showed the presence of older abalone and a remarkable absence of sub-legal sized animals, as in this survey. This suggests again that, for whatever reason, recruitment to the Cumshewa Inlet abalone population has been extremely poor since the mid-1970s.

Again, as in the 1985 survey in the Central Coast (Farlinger and Bates 1986), the 1987 sampling in Area 2E provided evidence that the decline of abalone abundance may be halted. Annual quotas are likely to remain at the present level until evidence is found of an increase or further decline in abalone populations.

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**Appendix 1. Description of the diving sites surveyed in Area 2E in 1987.**

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 001 DIVER: 00N

FISHERIES STATISTICAL: region 0 area 02 sub-area 19

LOCATION: Heater Harbour

1987 JUN 05 (PDT) TIME:START: 15:55 FINISH: 16:45

DEPTH FROM DATUM: MAX: 01.0 meters TIDE START: 2.0 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK./CBL. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 20 | Macrocystis integrifolia | 10 |
| BOTTOM | Laminaria sp. | 10 | Costaria sp. | 30 |
| TURF | articulated corallines | 10 | -- | 0 |
| ROCKS | -- | 20 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 001 | 000 | 1 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 002 | 000 | 2 |
| ABALONE | . | 007 | 004 | 001 | 3 |
| ABALONE | . | 008 | 003 | 000 | 3 |
| ABALONE | . | 009 | 002 | 002 | 0 |
| ABALONE | . | 010 | 001 | 000 | 1 |
| ABALONE | . | 011 | 005 | 001 | 4 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 003 | 000 | 3 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 006 * | | 6 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory  SITE: 002  DIVER: 00W

FISHERIES STATISTICAL: region 0  area 02  sub-area 19

LOCATION: Heater Harbour

1987 JUN 05  (PDT) TIME:START: 11:26  FINISH: 12:20

DEPTH FROM DATUM: MAX: 01.3 meters  TIDE START: 2.3 meters

EXPOSURE: Occasional Current  SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK./BLD./CBL.  SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 20 | Macrocystis integrifolia | 10 |
| BOTTOM | Cymathere sp. | 30 | Laminaria sp. | 10 |
| TURF | articulated corallines | 10 | -- | 0 |
| ROCKS | Lithothamnion sp. | 40 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 001 | 000 | 1 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 001 | 000 | 1 |
| ABALONE | . | 009 | 001 | 000 | 1 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 001 | 000 | 1 |
| ABALONE | . | 014 | 013 | 000 | 13 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 005 * | | 5 |
| RED TURBAN SNAIL | . | 099 | 003 * | | 3 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 003 DIVER: OON

FISHERIES STATISTICAL: region 0 area 02 sub-area 19

LOCATION: Heater Harbour

1987 JUN 05 (PDT) TIME:START: 14:40 FINISH: 15:35

DEPTH FROM DATUM: MAX: 01.6 meters TIDE START: 1.6 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BLD. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 20 | Macrocystis integrifolia | 10 |
| BOTTOM | Pterygophora californica | 10 | Costaria sp. | 10 |
| TURF | articulated corallines | 10 | -- | 0 |
| ROCKS | Lithothamnion sp. | 30 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 001 | 001 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 001 | 001 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 001 | 000 | 1 |
| ABALONE | . | 009 | 001 | 000 | 1 |
| ABALONE | . | 010 | 001 | 000 | 1 |
| ABALONE | . | 011 | 003 | 001 | 2 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 001 | 000 | 1 |
| SEA URCHIN (RED) | . | 099 | 007 * | | 7 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 004 DIVER: 00W

FISHERIES STATISTICAL: region 0 area 02 sub-area 19

LOCATION: Heater Harbour

1987 JUN 05 (PDT) TIME:START: 09:30 FINISH: 10:45

DEPTH FROM DATUM: MAX: 02.6 meters TIDE START: 3.0 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK./CBL. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 30 | -- | 0 |
| BOTTOM | Cymathere sp. | 10 | Laminaria sp. | 10 |
| TURF | articulated corallines | 10 | -- | 0 |
| ROCKS | Lithothamnion sp. | 60 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 002 | 002 | 0 |
| ABALONE | . | 002 | 004 | 003 | 1 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 004 | 000 | 4 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 003 | 003 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 001 | 001 | 0 |
| ABALONE | . | 010 | 001 | 001 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 002 | 001 | 1 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 001 | 001 | 0 |
| ABALONE | . | 016 | 001 | 000 | 1 |
| SEA URCHIN (RED) | . | 099 | 010 * | | 10 |
| RED TURBAN SNAIL | . | 099 | 003 * | | 3 |

DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1997

VESSEL: Glory SITE: 006 DIVER: OOS

FISHERIES STATISTICAL: region 0 area sub-area 19

LOCATION: Heater Harbour

1997 JUN 05 (PDT) TIME:START: 10:15 FINISH: 10:35

DEPTH FROM DATUM: MAX: 01.8 meters TIDE START: 2.8 meters

EXPOSURE: High Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK./SND./SHL. SLOPE: 00 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | -- | 0 | -- | 0 |
| BOTTOM | Phyllospadix sp. | 50 | Pterygophora californica | 50 |
| TURF | -- | 0 | -- | 0 |
| ROCKS | Lithothamnion sp. | 50 | -- | 0 |

REMARKS: Aborted - Target Species Absent

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | | 0 |
| ABALONE | . | 002 | 000 | | 0 |
| ABALONE | . | 003 | 000 | | 0 |
| ABALONE | . | 004 | 000 | | 0 |
| ABALONE | . | 005 | 000 | | 0 |
| ABALONE | . | 006 | 000 | | 0 |
| ABALONE | . | 007 | 000 | | 0 |
| ABALONE | . | 008 | 000 | | 0 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 007 DIVER: 00S

FISHERIES STATISTICAL: region 0 area 02 sub-area 19

LOCATION: Luxana Bay

1987 JUN 05 (PDT) TIME:START: 11:10 FINISH: 11:55

DEPTH FROM DATUM: MAX: 04.9 meters TIDE START: 2.4 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK./BLD. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 80 | -- | 0 |
| BOTTOM | Cymathere sp. | 70 | -- | 0 |
| TURF | -- | 0 | -- | 0 |
| ROCKS | Lithothamnion sp. | 60 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 001 | 001 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 004 | 003 | 1 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 001 | 000 | 1 |
| ABALONE | . | 013 | 001 | 001 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 010 DIVER: 00N

FISHERIES STATISTICAL: region 0 area 02 sub-area 17

LOCATION: Carpenter Bay

1987 JUN 06 (PDT) TIME:START: 09:51 FINISH: 10:39

DEPTH FROM DATUM: MAX: 00.4 meters TIDE START: 3.3 meters

EXPOSURE: Well Sheltered SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BLD. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Macrocystis integrifolia | 20 | Desmarestia sp. | 10 |
| BOTTOM | Red algae - bladed | 10 | -- | 0 |
| TURF | -- | 0 | -- | 0 |
| ROCKS | Lithothamnion sp. | 20 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 001 | 000 | 1 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 001 | 001 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 001 | 000 | 1 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 001 | 000 | 1 |
| ABALONE | . | 015 | 002 | 000 | 2 |
| ABALONE | . | 016 | 004 | 000 | 4 |
| SEA URCHIN (RED) | . | 099 | 004 * | | 4 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 011 DIVER: CON

FISHERIES STATISTICAL: region 0 area 02 sub-area 17

LOCATION: Carpenter Bay

1987 JUN 06 (PDT) TIME:START: 11:37 FINISH: 12:15

DEPTH FROM DATUM: MAX: . meters TIDE START: 2.9 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK./BLD. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 30 | | -- | 0 |
| BOTTOM | Laminaria sp. | 20 | | Pterygophora californica | 10 |
| TURF | Phyllospadix sp. | 10 | | -- | 0 |
| ROCKS | Lithothamnion sp. | 10 | | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 001 | 000 | 1 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 002 | 000 | 2 |
| SEA URCHIN (RED) | . | 099 | 006 * | | 6 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 012 DIVER: 00N

FISHERIES STATISTICAL: region 0 area 02 sub-area 17

LOCATION: Carpenter Bay

1987 JUN 06 (PDT) TIME:START: 15:28 FINISH: 16:10

DEPTH FROM DATUM: MAX: 05.0 meters TIDE START: 1.7 meters

EXPOSURE: Strong Tidal Flows SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: CBL./GRV. SLOPE: 00 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Macrocystis integrifolia | 80 | -- | 0 |
| BOTTOM | Laminaria sp. | 00 | Costaria sp. | 20 |
| TURF | articulated corallines | 10 | -- | 0 |
| ROCKS | Lithothamnion sp. | 50 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 001 | 000 | 1 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 002 | 000 | 2 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1997

VESSEL: Glory SITE: 014 DIVER: OOW

FISHERIES STATISTICAL: region 0 area 02 sub-area 17

LOCATION: Carpenter Bay

1987 JUN 06 (PDT) TIME:START: 10:03 FINISH: 10:47

DEPTH FROM DATUM: MAX: 02.0 meters TIDE START: 3.3 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(SMO) SLOPE: 40 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | -- | 0 | -- | 0 |
| BOTTOM | Phyllospadix sp. | 10 | Desmarestia sp. | 10 |
| TURF | articulated corallines | 20 | -- | 0 |
| ROCKS | Lithothamnion sp. | 80 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 001 | 000 | 1 |
| ABALONE | . | 004 | 001 | 000 | 1 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 001 | 000 | 1 |
| ABALONE | . | 011 | 004 | 000 | 4 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 002 | 000 | 2 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 001 | 000 | 1 |
| SEA URCHIN (RED) | . | 099 | 025 * | | 25 |
| -- | . | 099 | 001 * | | 1 |
| -- | . | 099 | 001 * | | 1 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 015 DIVER: 00G

FISHERIES STATISTICAL: region 0 area 02 sub-area 17

LOCATION: Carpenter Bay

1987 JUN 06 (PDT) TIME:START: 15:20 FINISH: 16:00

DEPTH FROM DATUM: MAX: 02.3 meters TIDE START: 1.7 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(SMO) SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 10 | ! | -- | 0 |
| BOTTOM | Pterygophora californica | 30 | ! | -- | 0 |
| TURF | articulated corallines | 10 | ! | -- | 0 |
| ROCKS | Lithothamnion sp. | 70 | ! | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 004 | 000 | 4 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 001 | 000 | 1 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 002 | 000 | 2 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| -- | . | 099 | 008 * | | 8 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 017 DIVER: 005

FISHERIES STATISTICAL: region 0 area 02 sub-area 17

LOCATION: Carpenter Bay

1987 JUN 07 (PDT) TIME:START: 09:15 FINISH: 10:15

DEPTH FROM DATUM: MAX: . meters TIDE START: 3.1 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: CBL./SND./SHL. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 10 | -- | 0 |
| BOTTOM | Phyllospadix sp. | 30 | -- | 0 |
| TURF | articulated corallines | 30 | -- | 0 |
| ROCKS | Lithothamnion sp. | 10 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 010 | 003 | 7 |
| ABALONE | . | 002 | 004 | 002 | 2 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 005 * | | 5 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 018 DIVER: COW

FISHERIES STATISTICAL: region 0 area 02 sub-area 17

LOCATION: Carpenter Bay

1987 JUN 06 (PDT) TIME:START: 11:40 FINISH: 12:36

DEPTH FROM DATUM: MAX: 02.0 meters TIDE START: 2.9 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK./BLD. SLOPE: 10 degrees

| DOMINANT ALGAE | SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 30 | -- | 0 |
| BOTTOM | Laminaria sp. | 10 | Alaria sp. | 10 |
| TURF | articulated corallines | 10 | Ulva sp. | 10 |
| ROCKS | Lithothamnion sp. | 30 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 002 | 002 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 002 | 000 | 2 |
| ABALONE | . | 009 | 002 | 001 | 1 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 001 | 000 | 1 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 005 * | | 5 |
| RED TURBAN SNAIL | . | 099 | 002 * | | 2 |

DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 019 DIVER: 00S

FISHERIES STATISTICAL: region 0 area 02 sub-area 17

LOCATION: Carpenter Bay

1987 JUN 07 (PDT) TIME:START: 10:48 FINISH: 11:25

DEPTH FROM DATUM: MAX: . meters TIDE START: 3.4 meters

EXPOSURE: High Tide Surge Only SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(CRV) SLOPE: 40 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 50 | -- | 0 |
| BOTTOM | Laminaria sp. | 20 | Costaria sp. | 20 |
| TURF | articulated corallines | 0 | -- | 0 |
| ROCKS | Lithothamnion sp. | 30 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 001 | 001 | 0 |
| ABALONE | . | 003 | 002 | 000 | 2 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 003 | 002 | 1 |
| ABALONE | . | 009 | 001 | 000 | 1 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 002 | 000 | 2 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 020 DIVER: 00N

FISHERIES STATISTICAL: region 0 area 02 sub-area 15

LOCATION: Copper Islands

1987 JUN 07 (PDT) TIME:START: 08:57 FINISH: 09:17

DEPTH FROM DATUM: MAX: 02.1 meters TIDE START: 3.1 meters

EXPOSURE: Occasional Current SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(CRV) SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | -- | 0 | -- | 0 |
| BOTTOM | Egregia menziesii | 10 | Phyllospadix sp. | 0 |
| TURF | Codium fragile | 10 | -- | 0 |
| ROCKS | -- | 0 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 001 | 000 | 1 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 004 * | | 4 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 021 DIVER: 00N

FISHERIES STATISTICAL: region 0 area 02 sub-area 15

LOCATION: Copper Islands

1987 JUN 07 PDT) TIME:START: 09:35 FINISH: 09:55

DEPTH FROM DATUM: MAX: 03.3 meters TIDE START: 3.2 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BLD. SLOPE: 00 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | -- | 0 | ! | -- | 0 |
| BOTTOM | -- | 0 | ! | -- | 0 |
| TURF | articulated corallines | 10 | ! | -- | 0 |
| ROCKS | Lithothamnion sp. | 20 | ! | -- | 0 |

REMARKS: Aborted - Target Species Absent

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | | 0 |
| ABALONE | . | 002 | 000 | | 0 |
| ABALONE | . | 003 | 000 | | 0 |
| ABALONE | . | 004 | 000 | | 0 |
| ABALONE | . | 005 | 000 | | 0 |
| ABALONE | . | 006 | 000 | | 0 |
| ABALONE | . | 007 | 000 | | 0 |
| ABALONE | . | 008 | 000 | | 0 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 022 DIVER: OON

FISHERIES STATISTICAL: region 0 area 02 sub-area 15

LOCATION: Skincuttle Inlet

1987 JUN 07 (PDT) TIME:START: 10:40 FINISH: 11:10

DEPTH FROM DATUM: MAX: 02.0 meters TIDE START: 3.4 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK./BLD. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 10 | ! | -- | 0 |
| BOTTOM | Costaria sp. | 10 | ! | -- | 0 |
| TURF | articulated corallines | 0 | ! | -- | 0 |
| ROCKS | Lithothamnion sp. | 0 | ! | -- | 0 |

REMARKS: Aborted - Target Species Absent

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| SEA URCHIN (RED) | . | 099 | 003 * | | 3 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory  SITE: 023  DIVER: OOG

FISHERIES STATISTICAL: region 0  area 02  sub-area 15

LOCATION: Skincuttle Inlet

1987 JUN 08  (PDT) TIME:START: 09:30  FINISH: 10:40

DEPTH FROM DATUM: MAX: 0.3 meters  TIDE START: 3.4 meters

EXPOSURE: Moderate Exposure  SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK./BLD.  SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Macrocystis integrifolia | 40 | Nereocystis luetkeana | 10 |
| BOTTOM | Pterygophora californica | 50 | Laminaria sp. | 20 |
| TURF | -- | 0 | -- | 0 |
| ROCKS | Lithothamnion sp. | 50 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 002 | 000 | 2 |
| ABALONE | . | 002 | 002 | 000 | 2 |
| ABALONE | . | 003 | 001 | 000 | 1 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 001 | 000 | 1 |
| ABALONE | . | 009 | 002 | 000 | 2 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 001 | 001 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 001 | 000 | 1 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 001 | 000 | 1 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 024 DIVER: OON

FISHERIES STATISTICAL: region 0 area 02 sub-area 15

LOCATION: Skincuttle Inlet

1987 JUN 08 (PDT) TIME:START: 11:20 FINISH: 12:00

DEPTH FROM DATUM: MAX: 3.0 meters TIDE START: 4.8 meters

EXPOSURE: High Tide Surge Only SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(SMO) SLOPE: 50 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | Egregia menziesii | 20 | ! | -- | 0 |
| BOTTOM | -- | 0 | ! | -- | 0 |
| TURF | Codium fragile | 20 | ! | articulated corallines | 10 |
| ROCKS | Lithothamnion sp. | 80 | ! | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 001 | 000 | 1 |
| ABALONE | . | 005 | 001 | 000 | 1 |
| ABALONE | . | 006 | 004 | 000 | 4 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 001 | 000 | 1 |
| ABALONE | . | 011 | 002 | 000 | 2 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 001 | 000 | 1 |
| ABALONE | . | 015 | 007 | 000 | 7 |
| ABALONE | . | 016 | 001 | 000 | 1 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 026 DIVER: 00G

FISHERIES STATISTICAL: region 0 area 02 sub-area 15

LOCATION: Skincuttle Inlet

1987 JUN 07 (PDT) TIME:START: 14:30 FINISH: 15:30

DEPTH FROM DATUM: MAX: 0.6 meters TIDE START: 2.1 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK./BLD. SLOPE: 20 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Macrocystis integrifolia | 30 | -- | 0 |
| BOTTOM | Costaria sp. | 20 | Laminaria sp. | 20 |
| TURF | Ulva sp. | 50 | -- | 0 |
| ROCKS | Lithothamnion sp. | 70 | -- | 0 |

REMARKS: New survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 008 | 000 | 8 |
| ABALONE | . | 002 | 001 | 000 | 1 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 002 | 000 | 2 |
| ABALONE | . | 007 | 001 | 000 | 1 |
| ABALONE | . | 008 | 004 | 001 | 3 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 007 | 002 | 5 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 003 | 000 | 3 |
| ABALONE | . | 013 | 001 | 001 | 0 |
| ABALONE | . | 014 | 006 | 001 | 5 |
| ABALONE | . | 015 | 004 | 000 | 4 |
| ABALONE | . | 016 | 002 | 000 | 2 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 027 DIVER: 00W

FISHERIES STATISTICAL: region 0 area 02 sub-area 15

LOCATION: Skincuttle Inlet

1987 JUN 08 (PDT) TIME:START: 09:45 FINISH: 10:25

DEPTH FROM DATUM: MAX: 05.3 meters TIDE START: 3.7 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK./SND./SHL. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | Macrocystis integrifolia | 90 | ! | -- | 0 |
| BOTTOM | Desmarestia sp. | 20 | ! | -- | 0 |
| TURF | -- | 0 | ! | -- | 0 |
| ROCKS | Lithothamnion sp. | 30 | ! | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 001 | 000 | 1 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 001 * | | 1 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 028 DIVER: 00G

FISHERIES STATISTICAL: region 0 area 02 sub-area 15

LOCATION: Skincuttle Inlet

1987 JUN 07 (PDT) TIME:START: 16:08 FINISH: 17:00

DEPTH FROM DATUM: MAX: 1.2 meters TIDE START: 1.8 meters

EXPOSURE: High Tide Surge Only SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(CRV) SLOPE: 20 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | -- | 20 | Egregia menziesii | | 10 |
| BOTTOM | Laminaria sp. | 20 | Costaria sp. | | 50 |
| TURF | articulated corallines | 10 | -- | | 0 |
| ROCKS | Lithothamnion sp. | 70 | -- | | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 002 | 000 | 2 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 003 | 000 | 3 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 003 | 000 | 3 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 001 | 000 | 1 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 004 | 000 | 4 |
| ABALONE | . | 010 | 001 | 000 | 1 |
| ABALONE | . | 011 | 001 | 000 | 1 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 001 | 000 | 1 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 002 | 000 | 2 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 010 * | | 10 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 029 DIVER: 00N

FISHERIES STATISTICAL: region 0 area 02 sub-area 15

LOCATION: Copper Islands

1987 JUN 07 (PDT) TIME:START: 16:05 FINISH: 16:43

DEPTH FROM DATUM: MAX: 01.5 meters TIDE START: 1.8 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(CRV) SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 10 | -- | 0 |
| BOTTOM | Red algae - bladed | 10 | Laminaria sp. | 10 |
| TURF | articulated corallines | 50 | -- | 0 |
| ROCKS | Lithothamnion sp. | 10 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 002 | 000 | 2 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 002 | 000 | 2 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 001 | 000 | 1 |
| ABALONE | . | 015 | 001 | 000 | 1 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 005 * | | 5 |
| RED TURBAN SNAIL | . | 099 | 012 * | | 12 |

DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 030 DIVER: DON

FISHERIES STATISTICAL: region 0 area 02 sub-area 14

LOCATION: Copper Islands

1987 JUN 07 (PDT) TIME:START: 14:50 FINISH: 15:35

DEPTH FROM DATUM: MAX: 0.6 meters TIDE START: 2.1 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(CRV) SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | Egregia menziesii | 30 | | -- | 0 |
| BOTTOM | Laminaria sp. | 20 | | -- | 0 |
| TURF | articulated corallines | 20 | | -- | 0 |
| ROCKS | Lithothamnion sp. | 30 | | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 002 | 000 | 2 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 002 | 000 | 2 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 001 | 000 | 1 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 002 | 000 | 2 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 015 * | | 15 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 031 DIVER: 00S

FISHERIES STATISTICAL: region 0 area 02 sub-area 14

LOCATION: Poole Inlet

1987 JUN 08 (PDT) TIME:START: 15:10 FINISH: 15:50

DEPTH FROM DATUM: MAX: -6.7 meters TIDE START: 3.8 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK./CBL./GRV. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | Macrocystis integrifolia | 50 | ! | -- | 0 |
| BOTTOM | Laminaria sp. | 10 | ! | Costaria sp. | 10 |
| TURF | articulated corallines | 30 | ! | -- | 0 |
| ROCKS | Lithothamnion sp. | 50 | ! | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 002 | 000 | 2 |
| ABALONE | . | 002 | 002 | 001 | 1 |
| ABALONE | . | 003 | 002 | 000 | 2 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 006 | 000 | 6 |
| ABALONE | . | 007 | 002 | 000 | 2 |
| ABALONE | . | 008 | 001 | 000 | 1 |
| ABALONE | . | 009 | 001 | 000 | 1 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 020 * | | 20 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 032 DIVER: 00G

FISHERIES STATISTICAL: region 0 area 02 sub-area 14

LOCATION: Unknown Location

1987 JUN 09 (PDT) TIME:START: 09:50 FINISH: 10:35

DEPTH FROM DATUM: MAX: 06.8 meters TIDE START: 2.3 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(SMO) SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 10 | ! | -- | 0 |
| BOTTOM | Laminaria sp. | 50 | ! | -- | 0 |
| TURF | articulated corallines | 30 | ! | -- | 0 |
| ROCKS | Lithothamnion sp. | 50 | ! | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 001 | 000 | 1 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 001 | 000 | 1 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 001 | 000 | 1 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 005 | 000 | 5 |
| ABALONE | . | 016 | 000 | 000 | 0 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 033 DIVER: 00N

FISHERIES STATISTICAL: region 0 area 02 sub-area 15

LOCATION: Unknown Location

1987 JUN 09 (PDT) TIME:START: 10:48 FINISH: 11:50

DEPTH FROM DATUM: MAX: 01.2 meters TIDE START: 3.4 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BLD. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 30 | -- | 0 |
| BOTTOM | Costaria sp. | 10 | Cymathere sp. | 10 |
| TURF | Ulva sp. | 10 | -- | 0 |
| ROCKS | Lithothamnion sp. | 10 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 001 | 000 | 1 |
| ABALONE | . | 002 | 006 | 002 | 4 |
| ABALONE | . | 003 | 003 | 003 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 004 | 000 | 4 |
| ABALONE | . | 008 | 002 | 000 | 2 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 001 | 001 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 001 | 000 | 1 |
| ABALONE | . | 015 | 004 | 004 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 003 * | | 3 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 034 DIVER: CON

FISHERIES STATISTICAL: region 0 area 02 sub-area 14

LOCATION: Unknown Location

1987 JUN 09 (PDT) TIME:START: 09:16 FINISH: 10:18

DEPTH FROM DATUM: MAX: 01.3 meters TIDE START: 1.8 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BLD. SLOPE: 00 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 10 | -- | 0 |
| BOTTOM | Costaria sp. | 20 | Phyllospadix sp. | 10 |
| TURF | articulated corallines | 10 | Ulva sp. | 10 |
| ROCKS | Lithothamnion sp. | 10 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 001 | 000 | 1 |
| ABALONE | . | 002 | 003 | 002 | 1 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 001 | 000 | 1 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 002 | 000 | 2 |
| ABALONE | . | 011 | 002 | 001 | 1 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 003 | 002 | 1 |
| ABALONE | . | 015 | 001 | 001 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 004 * | | 4 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 035 DIVER: OON

FISHERIES STATISTICAL: region 0 area 02 sub-area 14

LOCATION: Poole Inlet

1987 JUN 08 (PDT) TIME:START: 14:50 FINISH: 15:30

DEPTH FROM DATUM: MAX: 01.0 meters TIDE START: 3.8 meters

EXPOSURE: Occasional Current SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: CBL./SND./SHL. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Macrocystis integrifolia | 50 | Nereocystis luetkeana | 20 |
| BOTTOM | Costaria sp. | 20 | Alaria sp. | 20 |
| TURF | -- | 0 | -- | 0 |
| ROCKS | Lithothamnion sp. | 30 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 003 | 000 | 3 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 001 | 000 | 1 |
| ABALONE | . | 014 | 004 | 000 | 4 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 002 * | | 2 |

DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 036 DIVER: 00W

FISHERIES STATISTICAL: region 0 area 02 sub-area 12

LOCATION: Werner Bay

1987 JUN 09 (PDT) TIME:START: 14:25 FINISH: 15:15

DEPTH FROM DATUM: MAX: 03.0 meters TIDE START: 3.7 meters

EXPOSURE: High Tide Surge Only SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK./CBL./GRV. SLOPE: 00 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | -- | 90 | ! | -- | 0 |
| BOTTOM | Alaria sp. | 20 | ! | -- | 0 |
| TURF | -- | 0 | ! | -- | 0 |
| ROCKS | Lithothamnion sp. | 30 | ! | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 005 | 005 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 001 | 001 | 0 |
| ABALONE | . | 013 | 001 | 001 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 001 * | | 1 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 037 DIVER: 00W

FISHERIES STATISTICAL: region 0 area 02 sub-area 11

LOCATION: Unknown Location

1987 JUN 10 (PDT) TIME:START: 14:00 FINISH: 15:05

DEPTH FROM DATUM: MAX: 01.7 meters TIDE START: 4.3 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BLD./CBL./GRV./SHL. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | -- | 0 | -- | 0 |
| BOTTOM | Costaria sp. | 10 | Laminaria sp. | 10 |
| TURF | Red algae - filamentous | 10 | -- | 0 |
| ROCKS | Lithothamnion sp. | 70 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 001 | 001 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 001 | 001 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 002 | 001 | 1 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 005 | 004 | 1 |
| ABALONE | . | 014 | 001 | 000 | 1 |
| ABALONE | . | 015 | 003 | 000 | 3 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 002 * | | 2 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 038 DIVER: 008

FISHERIES STATISTICAL: region 0 area 02 sub-area 11

LOCATION: Unknown Location

1987 JUN 10 (PDT) TIME:START: 10:40 FINISH: 11:45

DEPTH FROM DATUM: MAX: 05.4 meters TIDE START: 2.2 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK./BLD. SLOPE: 30 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 20 | -- | 0 |
| BOTTOM | Costaria sp. | 40 | Cymathere sp. | 40 |
| TURF | articulated corallines | 0 | -- | 0 |
| ROCKS | Lithothamnion sp. | 0 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 010 | 000 | 10 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 001 | 000 | 1 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 003 * | | 3 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 039 DIVER: GON

FISHERIES STATISTICAL: region 0 area 02 sub-area 11

LOCATION: Unknown Location

1987 JUN 10 (PDT) TIME:START: 12:15 FINISH: 13:00

DEPTH FROM DATUM: MAX: 03.5 meters TIDE START: 3.6 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(SMO) SLOPE: 20 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | -- | 80 | | -- | 0 |
| BOTTOM | Costaria sp. | 20 | | Cymathere sp. | 20 |
| TURF | articulated corallines | 0 | | -- | 0 |
| ROCKS | Lithothamnion sp. | 90 | | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 005 | 003 | 2 |
| ABALONE | . | 004 | 002 | 000 | 2 |
| ABALONE | . | 005 | 002 | 000 | 2 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 003 | 002 | 1 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 002 | 000 | 2 |
| ABALONE | . | 010 | 002 | 000 | 2 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 003 | 000 | 3 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 005 * | | 5 |

DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 040 DIVER: 00N

FISHERIES STATISTICAL: region 0 area 02 sub-area 11

LOCATION: Unknown Location

1987 JUN 10 (PDT) TIME:START: 10:20 FINISH: 10:42

DEPTH FROM DATUM: MAX: 02.5 meters TIDE START: 1.8 meters

EXPOSURE: Occasional Current SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(SMO) SLOPE: 70 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Egregia menziesii | 10 | -- | 0 |
| BOTTOM | Desmarestia sp. | 10 | -- | 0 |
| TURF | articulated corallines | 30 | -- | 0 |
| ROCKS | Lithothamnion sp. | 30 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| -- | . | 099 | 030 * | | 30 |
| SEA URCHIN (RED) | . | 099 | 001 * | | 1 |
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 001 | 000 | 1 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |

DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 041 DIVER: DON

FISHERIES STATISTICAL: region 0 area 02 sub-area 11

LOCATION: De La Beche Inlet

1997 JUN 10 (PDT) TIME:START: 11:04 FINISH: 11:26

DEPTH FROM DATUM: MAX: 01.7 meters TIDE START: 2.6 meters

EXPOSURE: Well Sheltered SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(SMO) SLOPE: 40 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | -- | 0 | -- | 0 |
| BOTTOM | Desmarestia sp. | 10 | -- | 0 |
| TURF | Ulva sp. | 10 | -- | 0 |
| ROCKS | Lithothamnion sp. | 40 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| SEA URCHIN (RED) | . | 099 | 001 * | | 1 |
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 001 | 000 | 1 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |

DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 042 DIVER: 003

FISHERIES STATISTICAL: region 0 area 02 sub-area 12

LOCATION: Werner Bay

1987 JUN 09 (PDT) TIME:START: 13:45 FINISH: 14:35

DEPTH FROM DATUM: MAX: 00.6 meters TIDE START: 4.0 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(CRV) SLOPE: 40 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 20 | Costaria sp. | 20 |
| BOTTOM | Desmarestia sp. | 10 | Laminaria sp. | 10 |
| TURF | Laminaria sp. | 20 | -- | 0 |
| ROCKS | Lithothamnion sp. | 70 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 008 | 000 | 8 |
| ABALONE | . | 002 | 002 | 000 | 2 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 002 | 000 | 2 |
| ABALONE | . | 006 | 001 | 000 | 1 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 001 | 000 | 1 |
| ABALONE | . | 009 | 008 | 000 | 8 |
| ABALONE | . | 010 | 003 | 000 | 3 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 001 * | | 1 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 043 DIVER: 00G

FISHERIES STATISTICAL: region 0 area 02 sub-area 12

LOCATION: Werner Bay

1987 JUN 09 (PDT) TIME:START: 15:00 FINISH: 15:45

DEPTH FROM DATUM: MAX: -1.9 meters TIDE START: 3.3 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(SMO) SLOPE: 20 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | -- | 30 | -- | 0 |
| BOTTOM | Costaria sp. | 10 | Laminaria sp. | 10 |
| TURF | Laminaria sp. | 20 | articulated corallines | 10 |
| ROCKS | Lithothamnion sp. | 70 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 003 | 000 | 3 |
| ABALONE | . | 002 | 001 | 000 | 1 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 001 | 000 | 1 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 001 | 000 | 1 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 001 | 000 | 1 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 002 | 000 | 2 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 002 | 000 | 2 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 002 | 000 | 2 |
| SEA URCHIN (RED) | . | 099 | 005 * | | 5 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory  SITE: 044  DIVER: OON

FISHERIES STATISTICAL: region 3  area 02  sub-area 11

LOCATION: Bishof Islands

1987 JUN 04  (PDT) TIME:START: 14:20  FINISH: 15:05

DEPTH FROM DATUM: MAX: 03.1 meters  TIDE START: 1.5 meters

EXPOSURE: High Tide Surge Only  SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(SMO)  SLOPE: 50 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | -- | 0 | | -- | 0 |
| BOTTOM | Unknowns | 10 | | -- | 0 |
| TURF | articulated corallines | 20 | | -- | 0 |
| ROCKS | Lithothamnion sp. | 70 | | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 001 | 000 | 1 |
| ABALONE | . | 002 | 002 | 000 | 2 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 002 | 000 | 2 |
| ABALONE | . | 009 | 001 | 000 | 1 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 001 | 000 | 1 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 003 * | | 3 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 045 DIVER: 00B

FISHERIES STATISTICAL: region 0 area 02 sub-area 11

LOCATION: Bishof Islands

1987 JUN 10 (PDT) TIME:START: 15:46 FINISH: 16:28

DEPTH FROM DATUM: MAX: 02.7 meters TIDE START: 3.4 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK./BLD. SLOPE: 20 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 10 | | -- | 0 |
| BOTTOM | Costaria sp. | 50 | | Cymathere sp. | 50 |
| TURF | articulated corallines | 0 | | -- | 0 |
| ROCKS | Lithothamnion sp. | 90 | | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 003 | 000 | 3 |
| ABALONE | . | 005 | 003 | 000 | 3 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 001 | 000 | 1 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 001 | 000 | 1 |
| ABALONE | . | 014 | 002 | 000 | 2 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 003 * | | 3 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 046 DIVER: COW

FISHERIES STATISTICAL: region 0 area 02 sub-area 11

LOCATION: Unknown Location

1987 JUN 04 (PDT) TIME:START: 11:06 FINISH: 12:00

DEPTH FROM DATUM: MAX: 01.0 meters TIDE START: 2.8 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(SMO) SLOPE: 20 degrees

| DOMINANT ALGAE | SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 20 | -- | 0 |
| BOTTOM | Laminaria sp. | 20 | Costaria sp. | 10 |
| TURF | articulated corallines | 30 | -- | 0 |
| ROCKS | Lithothamnion sp. | 60 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 002 | 000 | 2 |
| ABALONE | . | 002 | 002 | 000 | 2 |
| ABALONE | . | 003 | 001 | 000 | 1 |
| ABALONE | . | 004 | 003 | 000 | 3 |
| ABALONE | . | 005 | 010 | 000 | 10 |
| ABALONE | . | 006 | 001 | 000 | 1 |
| ABALONE | . | 007 | 002 | 000 | 2 |
| ABALONE | . | 008 | 003 | 000 | 3 |
| ABALONE | . | 009 | 006 | 000 | 6 |
| ABALONE | . | 010 | 013 | 000 | 13 |
| ABALONE | . | 011 | 005 | 000 | 5 |
| ABALONE | . | 012 | 006 | 000 | 6 |
| ABALONE | . | 013 | 001 | 000 | 1 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 008 | 000 | 8 |
| ABALONE | . | 016 | 001 | 000 | 1 |
| SEA URCHIN (RED) | . | 099 | 015 * | | 15 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 048 DIVER: 00S

FISHERIES STATISTICAL: region 0 area 02 sub-area 11

LOCATION: Ramsay Passage

1987 JUN 04 (PDT) TIME:START: : FINISH: 11:15

DEPTH FROM DATUM: MAX: . meters TIDE START: . meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(CRV) SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Egregia menziesii | 30 | Macrocystis integrifolia | 10 |
| BOTTOM | Costaria sp. | 60 | Laminaria sp. | 30 |
| TURF | -- | 0 | -- | 0 |
| ROCKS | Lithothamnion sp. | 0 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 002 | 000 | 2 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 001 | 000 | 1 |
| ABALONE | . | 004 | 001 | 000 | 1 |
| ABALONE | . | 005 | 001 | 000 | 1 |
| ABALONE | . | 006 | 001 | 000 | 1 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 005 | 000 | 5 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 002 | 000 | 2 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 049 DIVER: 008

FISHERIES STATISTICAL: region 0 area 02 sub-area 11

LOCATION: Ramsay Passage

1987 JUN 04 (PDT) TIME:START: 09:32 FINISH: 10:08

DEPTH FROM DATUM: MAX: . meters TIDE START: 3.1 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(CRV) SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | Macrocystis integrifolia | 30 | | -- | 20 |
| BOTTOM | Costaria sp. | 10 | | Desmarestia sp. | 10 |
| TURF | articulated corallines | 10 | | -- | 0 |
| ROCKS | Lithothamnion sp. | 50 | | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 001 | 000 | 1 |
| ABALONE | . | 003 | 001 | 000 | 1 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 001 | 000 | 1 |
| ABALONE | . | 006 | 002 | 000 | 2 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 003 | 000 | 3 |
| ABALONE | . | 009 | 001 | 000 | 1 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 001 | 000 | 1 |
| ABALONE | . | 012 | 003 | 000 | 3 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 001 | 001 | 0 |
| ABALONE | . | 015 | 001 | 000 | 1 |
| ABALONE | . | 016 | 000 | 000 | 0 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 050 DIVER: 00W

FISHERIES STATISTICAL: region 0 area 02 sub-area 11

LOCATION: Faraday Passage

1987 JUN 03 (PDT) TIME:START: 15:15 FINISH: 16:15

DEPTH FROM DATUM: MAX: 02.4 meters TIDE START: 1.9 meters

EXPOSURE: Occasional Current SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BLD./CBL./GRV./SHL. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Macrocystis integrifolia | 30 | -- | 0 |
| BOTTOM | Agarum sp. | 10 | -- | 0 |
| TURF | articulated corallines | 60 | -- | 0 |
| ROCKS | Lithothamnion sp. | 60 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 002 | 001 | 1 |
| ABALONE | . | 002 | 003 | 003 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 001 | 001 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 004 | 003 | 1 |
| ABALONE | . | 008 | 001 | 001 | 0 |
| ABALONE | . | 009 | 002 | 000 | 2 |
| ABALONE | . | 010 | 001 | 000 | 1 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 001 | 000 | 1 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 001 | 001 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 000 * | | 0 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 051 DIVER: 00G

FISHERIES STATISTICAL: region 0 area 02 sub-area 11

LOCATION: Unknown Location

1987 JUN 03 (PDT) TIME:START: 15:12 FINISH: 16:20

DEPTH FROM DATUM: MAX: 01.4 meters TIDE START: 2.3 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: CBL./GRV. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Macrocystis integrifolia | 10 | -- | 0 |
| BOTTOM | Agarum sp. | 50 | Laminaria sp. | 50 |
| TURF | -- | 0 | -- | 0 |
| ROCKS | Lithothamnion sp. | 50 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 001 | 000 | 1 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 002 | 000 | 2 |
| ABALONE | . | 010 | 002 | 000 | 2 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 002 | 000 | 2 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 001 | 000 | 1 |
| SEA URCHIN (RED) | . | 099 | 003 * | | 3 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 053 DIVER: COW

FISHERIES STATISTICAL: region 0 area 02 sub-area 11

LOCATION: Gogit Passage

1987 JUN 04 (PDT) TIME:START: 09:35 FINISH: 10:30

DEPTH FROM DATUM: MAX: 03.3 meters TIDE START: 3.1 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(SMO) SLOPE: 30 degrees

| DOMINANT ALGAE | SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 20 | ! | -- | 0 |
| BOTTOM | Laminaria sp. | 20 | ! | -- | 0 |
| TURF | articulated corallines | 20 | ! | -- | 0 |
| ROCKS | Lithothamnion sp. | 0 | ! | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 002 | 000 | 2 |
| ABALONE | . | 002 | 004 | 000 | 4 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 005 | 000 | 5 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 001 | 000 | 1 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 012 * | | 12 |

DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 054 DIVER: 006

FISHERIES STATISTICAL: region 0 area 02 sub-area 11

LOCATION: Faraday Passage

1987 JUN 03 (PDT) TIME:START: 16:20 FINISH: 17:10

DEPTH FROM DATUM: MAX: 00.9 meters TIDE START: 3.1 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK./CBL. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | -- | 0 | | -- | 0 |
| BOTTOM | Desmarestia sp. | 50 | | Cymathere sp. | 50 |
| TURF | Ulva sp. | 20 | | Hedophyllum sessile | 10 |
| ROCKS | Lithothamnion sp. | 60 | | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| SEA URCHIN (RED) | . | 099 | 003 * | | 3 |
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 002 | 000 | 2 |
| ABALONE | . | 003 | 001 | 000 | 1 |
| ABALONE | . | 004 | 001 | 000 | 1 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 005 | 000 | 5 |
| ABALONE | . | 010 | 006 | 000 | 6 |
| ABALONE | . | 011 | 002 | 000 | 2 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 003 | 000 | 3 |
| ABALONE | . | 015 | 004 | 000 | 4 |
| ABALONE | . | 016 | 000 | 000 | 0 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 055 DIVER: 00W

FISHERIES STATISTICAL: region 0 area 02 sub-area 11

LOCATION: Gogit Passage

1987 JUN 03 (PDT) TIME:START: 11:42 FINISH: 12:30

DEPTH FROM DATUM: MAX: 02.0 meters TIDE START: 1.7 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(SMO) SLOPE: 20 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 20 | Pterygophora californica | 10 |
| BOTTOM | Laminaria sp. | 10 | -- | 0 |
| TURF | articulated corallines | 30 | -- | 0 |
| ROCKS | Lithothamnion sp. | 30 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 002 | 000 | 2 |
| ABALONE | . | 002 | 001 | 000 | 1 |
| ABALONE | . | 003 | 001 | 000 | 1 |
| ABALONE | . | 004 | 001 | 000 | 1 |
| ABALONE | . | 005 | 012 | 001 | 11 |
| ABALONE | . | 006 | 003 | 000 | 3 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 001 | 000 | 1 |
| ABALONE | . | 009 | 008 | 000 | 8 |
| ABALONE | . | 010 | 008 | 000 | 8 |
| ABALONE | . | 011 | 001 | 000 | 1 |
| ABALONE | . | 012 | 002 | 001 | 1 |
| ABALONE | . | 013 | 002 | 001 | 1 |
| ABALONE | . | 014 | 001 | 000 | 1 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 001 | 000 | 1 |
| SEA URCHIN (RED) | . | 099 | 005 * | | 5 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 056 DIVER: 00S

FISHERIES STATISTICAL: region 0 area 02 sub-area 11

LOCATION: Gogit Passage

1987 JUN 03 (PDT) TIME:START: 11:21 FINISH: 11:53

DEPTH FROM DATUM: MAX: 03.4 meters TIDE START: 1.2 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(CRV) SLOPE: 20 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 70 | -- | 0 |
| BOTTOM | Costaria sp. | 40 | Desmarestia sp. | 20 |
| TURF | articulated corallines | 50 | -- | 0 |
| ROCKS | Lithothamnion sp. | 80 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| SEA URCHIN (RED) | . | 099 | 005 * | | 5 |
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 001 | 000 | 1 |
| ABALONE | . | 006 | 001 | 000 | 1 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 009 | 000 | 9 |
| ABALONE | . | 011 | 001 | 000 | 1 |
| ABALONE | . | 012 | 001 | 000 | 1 |
| ABALONE | . | 013 | 002 | 000 | 2 |
| ABALONE | . | 014 | 001 | 000 | 1 |
| ABALONE | . | 015 | 001 | 000 | 1 |
| ABALONE | . | 016 | 001 | 000 | 1 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 057 DIVER: 00S

FISHERIES STATISTICAL: region 0 area 02 sub-area 11

LOCATION: Gogit Passage

1987 JUN 03 (PDT) TIME:START: 10:08 FINISH: 10:43

DEPTH FROM DATUM: MAX: 08.3 meters TIDE START: 0.9 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(CRV) SLOPE: 20 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 30 | -- | 0 |
| BOTTOM | Costaria sp. | 60 | Desmarestia sp. | 30 |
| TURF | articulated corallines | 10 | -- | 0 |
| ROCKS | Lithothamnion sp. | 80 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 001 | 000 | 1 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 001 | 000 | 1 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 001 | 000 | 1 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 001 | 000 | 1 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 003 * | | 3 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 058 DIVER: COW

FISHERIES STATISTICAL: region 0 area 02 sub-area 11

LOCATION: Cogit Passage

1987 JUN 03 (PDT) TIME:START: 09:42 FINISH: 10:52

DEPTH FROM DATUM: MAX: 00.8 meters TIDE START: 2.3 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK./BLD./CBL. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 10 | -- | 0 |
| BOTTOM | Cymathere sp. | 20 | Laminaria sp. | 10 |
| TURF | articulated corallines | 10 | -- | 0 |
| ROCKS | Lithothamnion sp. | 40 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 001 | 000 | 1 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 004 | 004 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 002 | 001 | 1 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 001 | 000 | 1 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 001 | 000 | 1 |
| SEA URCHIN (RED) | . | 099 | 020 * | | 20 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 059 DIVER: OON

FISHERIES STATISTICAL: region 0 area 02 sub-area 08

LOCATION: Kunga Island

1987 JUN 01 (PDT) TIME:START: 16:10 FINISH: 17:05

DEPTH FROM DATUM: MAX: 03.7 meters TIDE START: 3.0 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BLD./CBL./GRV./SHL. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 30 | -- | 0 |
| BOTTOM | Costaria sp. | 10 | Cymathere sp. | 10 |
| TURF | articulated corallines | 20 | -- | 0 |
| ROCKS | Lithothamnion sp. | 30 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 002 | 000 | 2 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 004 | 002 | 2 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 001 | 000 | 1 |
| ABALONE | . | 009 | 003 | 000 | 3 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 002 | 000 | 2 |
| ABALONE | . | 014 | 002 | 000 | 2 |
| ABALONE | . | 015 | 004 | 000 | 4 |
| ABALONE | . | 016 | 001 | 000 | 1 |
| SEA URCHIN (RED) | . | 099 | 004 * | | 4 |

DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 060 DIVER: 003

FISHERIES STATISTICAL: region 0 area 02 sub-area 08

LOCATION: Kunga Island

1987 JUN 02 (PDT) TIME:START: 16:45 FINISH: 17:25

DEPTH FROM DATUM: MAX: 00.7 meters TIDE START: 2.9 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: CBL. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | -- | 0 | ! | -- | 0 |
| BOTTOM | Desmarestia sp. | 10 | ! | -- | 0 |
| TURF | -- | 0 | ! | -- | 0 |
| ROCKS | Lithothamnion sp. | 60 | ! | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 001 | 000 | 1 |
| ABALONE | . | 002 | 001 | 001 | 0 |
| ABALONE | . | 003 | 001 | 000 | 1 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 002 | 001 | 1 |
| ABALONE | . | 006 | 002 | 000 | 2 |
| ABALONE | . | 007 | 002 | 000 | 2 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 002 | 000 | 2 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 001 | 000 | 1 |
| ABALONE | . | 016 | 000 | 000 | 0 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 061 DIVER: OOK

FISHERIES STATISTICAL: region 0 area 02 sub-area 08

LOCATION: Unknown Location

1987 JUN 02 (PDT) TIME:START: 12:35 FINISH: 13:30

DEPTH FROM DATUM: MAX: 01.9 meters TIDE START: 1.1 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK./CBL. SLOPE: 20 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | -- | 0 | -- | 0 |
| BOTTOM | Costaria sp. | 10 | Egregia menziesii | 20 |
| TURF | articulated corallines | 10 | -- | 0 |
| ROCKS | -- | 60 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 001 | 001 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 062 DIVER: 00W

FISHERIES STATISTICAL: region 0 area 02 sub-area 08

LOCATION: Lyell Island

1987 JUN 11 (PDT) TIME:START: 09:45 FINISH: 10:25

DEPTH FROM DATUM: MAX: 03.2 meters TIDE START: 1.0 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BLD./CBL./GRV./SHL. SLOPE: 20 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 10 | | -- | 0 |
| BOTTOM | Costaria sp. | 10 | | Cymathere sp. | 10 |
| TURF | articulated corallines | 10 | | -- | 0 |
| ROCKS | Lithothamnion sp. | 10 | | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 002 | 000 | 2 |
| ABALONE | . | 002 | 005 | 003 | 2 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 001 | 001 | 0 |
| ABALONE | . | 007 | 002 | 000 | 2 |
| ABALONE | . | 008 | 006 | 000 | 6 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 001 | 000 | 1 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 003 * | | 3 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 063 DIVER: DOW

FISHERIES STATISTICAL: region 07 area 02 sub-area 08

LOCATION: Kunga Island

1987 JUN 11 (PDT) TIME:START: 11:00 FINISH: 11:45

DEPTH FROM DATUM: MAX: 02.0 meters TIDE START: 1.8 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BLD. SLOPE: 00 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | -- | 20 | -- | 0 |
| BOTTOM | Costaria sp. | 10 | Cymathere sp. | 10 |
| TURF | -- | 0 | -- | 0 |
| ROCKS | Lithothamnion sp. | 10 | Encrusting algae | 10 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 001 | 000 | 1 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 001 | 000 | 1 |
| ABALONE | . | 006 | 001 | 000 | 1 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 001 | 001 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 004 * | | 4 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory  SITE: 064  DIVER: OON

FISHERIES STATISTICAL: region 0  area 02  sub-area 08

LOCATION: Kunga Island

1987 JUN 02  (PDT) TIME:START: 12:13  FINISH: 13:10

DEPTH FROM DATUM: MAX: 01.4 meters  TIDE START: 1.0 meters

EXPOSURE: Moderate Exposure  SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK./CBL.  SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | -- | 10 | | -- | 0 |
| BOTTOM | Cymathere sp. | 10 | | Desmarestia sp. | 10 |
| TURF | articulated corallines | 10 | | -- | 0 |
| ROCKS | Lithothamnion sp. | 60 | | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 008 | 000 | 8 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 003 | 001 | 2 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 001 | 001 | 0 |
| ABALONE | . | 007 | 001 | 001 | 0 |
| ABALONE | . | 008 | 002 | 002 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 004 | 004 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 003 | 001 | 2 |
| SEA URCHIN (RED) | . | 099 | 007 * | | 7 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 065 DIVER: GOW

FISHERIES STATISTICAL: region 0 area 02 sub-area 07

LOCATION: Vertical Pt.

1987 JUN 11 (PDT) TIME:START: 16:35 FINISH: 17:30

DEPTH FROM DATUM: MAX: 00.3 meters TIDE START: 4.0 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BLD./CBL./GRV./SHL. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | Macrocystis integrifolia | 10 | | -- | 0 |
| BOTTOM | Alaria sp. | 10 | | Costaria sp. | 10 |
| TURF | articulated corallines | 10 | | -- | 0 |
| ROCKS | Lithothamnion sp. | 50 | | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 002 | 000 | 2 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 004 | 000 | 4 |
| ABALONE | . | 013 | 001 | 000 | 1 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 001 | 000 | 1 |
| SEA URCHIN (RED) | . | 099 | 000 * | | 0 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 066 DIVER: 00W

FISHERIES STATISTICAL: region 0 area 02 sub-area 07

LOCATION: Vertical Pt.

1987 JUN 12 (PDT) TIME:START: 09:50 FINISH: 10:20

DEPTH FROM DATUM: MAX: 00.9 meters TIDE START: 1.2 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BLD./CBL./GRV./SHL. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Macrocystis integrifolia | 20 | -- | 0 |
| BOTTOM | Costaria sp. | 10 | Desmarestia sp. | 10 |
| TURF | articulated corallines | 10 | -- | 0 |
| ROCKS | Lithothamnion sp. | 70 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 001 | 000 | 1 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 001 | 000 | 1 |
| ABALONE | . | 009 | 001 | 000 | 1 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 003 | 001 | 2 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 003 * | | 3 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 067 DIVER: DON

FISHERIES STATISTICAL: region 0 area 02 sub-area 07

LOCATION: Limestone Islands

1987 JUN 11 (PDT) TIME:START: 15:00 FINISH: 15:47

DEPTH FROM DATUM: MAX: 01.2 meters TIDE START: 4.9 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BLD. SLOPE: 30 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 60 | Costaria sp. | 40 |
| BOTTOM | Cymathere sp. | 50 | -- | 0 |
| TURF | -- | 0 | -- | 0 |
| ROCKS | -- | 0 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 003 | 000 | 3 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 004 | 000 | 4 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 002 | 000 | 2 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 007 * | | 7 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1997

VESSEL: Glory SITE: 068 DIVER: 006

FISHERIES STATISTICAL: region 0 area 02 sub-area 07

LOCATION: Breaker Bay

1997 JUN 11 (PDT) TIME:START: 19:05 FINISH: 19:35

DEPTH FROM DATUM: MAX: 02.3 meters TIDE START: 2.3 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(SMO) SLOPE: 20 degrees

| DOMINANT ALGAE | SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 0 | -- | 0 |
| BOTTOM | Costaria sp. | 10 | Laminaria sp. | 10 |
| TURF | articulated coralline | 10 | -- | 0 |
| ROCKS | Lithothamnion sp. | 80 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 002 | 000 | 2 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 001 | 000 | 1 |
| ABALONE | . | 005 | 003 | 000 | 3 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 001 | 000 | 1 |
| ABALONE | . | 008 | 001 | 000 | 1 |
| ABALONE | . | 009 | 004 | 000 | 4 |
| ABALONE | . | 010 | 001 | 000 | 1 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 002 | 000 | 2 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 002 | 000 | 2 |
| ABALONE | . | 015 | 002 | 000 | 2 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 003 * | | 3 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 069 DIVER: 00G

FISHERIES STATISTICAL: region 07 area 02 sub-area 07

LOCATION: Breaker Bay

1987 JUN 11 (PDT) TIME:START: 18:00 FINISH: 18:40

DEPTH FROM DATUM: MAX: 02.8 meters TIDE START: 3.0 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK./BLD. SLOPE: 20 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 20 | | -- | 0 |
| BOTTOM | Laminaria sp. | 10 | | Costaria sp. | 10 |
| TURF | -- | 0 | | -- | 0 |
| ROCKS | Lithothamnion sp. | 50 | | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 001 | 001 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 002 | 000 | 2 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 001 | 000 | 1 |
| SEA URCHIN (RED) | . | 099 | 000 * | | 0 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 070 DIVER: 00G

FISHERIES STATISTICAL: region 0 area 02 sub-area 07

LOCATION: Limestone Islands

1987 JUN 12 (PDT) TIME:START: 09:40 FINISH: 10:35

DEPTH FROM DATUM: MAX: 06.7 meters TIDE START: 1.2 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK.(SMO) SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | -- | 70 | -- | 0 |
| BOTTOM | Costaria sp. | 20 | Laminaria sp. | 50 |
| TURF | -- | 0 | -- | 0 |
| ROCKS | Lithothamnion sp. | 80 | -- | 0 |

REMARKS: previous survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 001 | 000 | 1 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 002 | 000 | 2 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 001 | 000 | 1 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 002 | 002 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 071 DIVER: 00G

FISHERIES STATISTICAL: region 0 area 02 sub-area 32

LOCATION: Rose Inlet

1997 JUN 05 (PDT) TIME:START: 14:17 FINISH: 15:10

DEPTH FROM DATUM: MAX: 02.1 meters TIDE START: 1.6 meters

EXPOSURE: Moderate Exposure SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: CBL./SND./SHL. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Macrocystis integrifolia | 50 | -- | 0 |
| BOTTOM | Desmarestia sp. | 50 | Laminaria sp. | 10 |
| TURF | articulated corallines | 10 | -- | 0 |
| ROCKS | Lithothamnion sp. | 70 | -- | 0 |

REMARKS: New survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 001 | 000 | 1 |
| ABALONE | . | 004 | 001 | 000 | 1 |
| ABALONE | . | 005 | 002 | 000 | 2 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 001 | 000 | 1 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |

DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 072 DIVER: 00W

FISHERIES STATISTICAL: region 0 area 02 sub-area 15

LOCATION: Skincuttle Inlet

1987 JUN 09 (PDT) TIME:START: 11:13 FINISH: 12:05

DEPTH FROM DATUM: MAX: 02.0 meters TIDE START: 4.7 meters

EXPOSURE: Occasional Current SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BLD./CBL./GRV./SHL. SLOPE: 20 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Macrocystis integrifolia | 30 | Nereocystis luetkeana | 10 |
| BOTTOM | Laminaria sp. | 0 | Desmarestia sp. | 0 |
| TURF | articulated corallines | 10 | -- | 0 |
| ROCKS | Lithothamnion sp. | 70 | -- | 0 |

REMARKS: New survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 001 | 000 | 1 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 001 | 000 | 1 |
| ABALONE | . | 004 | 001 | 000 | 1 |
| ABALONE | . | 005 | 003 | 000 | 3 |
| ABALONE | . | 006 | 002 | 000 | 2 |
| ABALONE | . | 007 | 002 | 000 | 2 |
| ABALONE | . | 008 | 001 | 001 | 0 |
| ABALONE | . | 009 | 001 | 000 | 1 |
| ABALONE | . | 010 | 002 | 000 | 2 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 001 | 000 | 1 |
| ABALONE | . | 014 | 002 | 000 | 2 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 003 * | | 3 |
| -- | . | 099 | 005 * | | 5 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 073 DIVER: 003

FISHERIES STATISTICAL: region 0 area 02 sub-area 08

LOCATION: Tanu Island

1987 JUN 11 (PDT) TIME:START: 10:55 FINISH: 11:50

DEPTH FROM DATUM: MAX: 02.8 meters TIDE START: 2.4 meters

EXPOSURE: Occasional Current SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: CBL./GRV. SLOPE: 40 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|---|
| CANOPY | Macrocystis integrifolia | 60 | : | -- | 0 |
| BOTTOM | Desmarestia sp. | 50 | ! | Costaria sp. | 20 |
| TURF | -- | 0 | ! | -- | 0 |
| ROCKS | Lithothamnion sp. | 50 | ! | -- | 0 |

REMARKS: New survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 001 | 000 | 1 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 001 | 000 | 1 |
| ABALONE | . | 006 | 002 | 000 | 2 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 001 | 000 | 1 |
| ABALONE | . | 009 | 001 | 000 | 1 |
| ABALONE | . | 010 | 002 | 000 | 2 |
| ABALONE | . | 011 | 001 | 000 | 1 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 002 | 000 | 2 |
| ABALONE | . | 014 | 001 | 000 | 1 |
| ABALONE | . | 015 | 004 | 001 | 3 |
| ABALONE | . | 016 | 002 | 001 | 1 |
| SEA URCHIN (RED) | . | 099 | 000 * | | 0 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 074 DIVER: 006

FISHERIES STATISTICAL: region 0 area 02 sub-area 08

LOCATION: Tanu Island

1997 JUN 11 (PDT) TIME:START: 14:05 FINISH: 15:05

DEPTH FROM DATUM: MAX: 01.5 meters TIDE START: 4.9 meters

EXPOSURE: Occasional Current SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: CBL./GRV. SLOPE: 10 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Macrocystis integrifolia | 60 | Laminaria sp. | 50 |
| BOTTOM | Desmarestia sp. | 50 | -- | 0 |
| TURF | -- | 0 | -- | 0 |
| ROCKS | Lithothamnion sp. | 60 | -- | 0 |

REMARKS: New survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 001 | 000 | 1 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 001 | 000 | 1 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 000 * | | 0 |

DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 075 DIVER: 00G

FISHERIES STATISTICAL: region 0 area 02 sub-area 03

LOCATION: Fairburn Shoals

1987 JUN 13 (PDT) TIME:START: 09:40 FINISH: 10:22

DEPTH FROM DATUM: MAX: 01.9 meters TIDE START: 1.2 meters

EXPOSURE: Strong Tidal Flows SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BLD./CBL./GRV./SHL. SLOPE: 00 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 30 | Macrocystis integrifolia | 30 |
| BOTTOM | Laminaria sp. | 20 | Alaria sp. | 10 |
| TURF | articulated corallines | 10 | -- | 0 |
| ROCKS | Lithothamnion sp. | 80 | -- | 0 |

REMARKS: New survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 001 | 000 | 1 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 001 | 000 | 1 |
| ABALONE | . | 006 | 001 | 000 | 1 |
| ABALONE | . | 007 | 002 | 000 | 2 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 001 | 000 | 1 |
| ABALONE | . | 012 | 000 | 000 | 0 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 001 | 000 | 1 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 000 * | | 0 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 076 DIVER: 00N

FISHERIES STATISTICAL: region 0 area 02 sub-area 03

LOCATION: Fairburn Shoals

1987 JUN 12 (PDT) TIME:START: 10:45 FINISH: 11:09

DEPTH FROM DATUM: MAX: 02.3 meters TIDE START: 1.4 meters

EXPOSURE: Strong Tidal Flows SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BRK./CBL. SLOPE: 00 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Macrocystis integrifolia | 50 | Nereocystis luetkeana | 50 |
| BOTTOM | Laminaria sp. | 10 | Pterygophora californica | 10 |
| TURF | articulated corallines | 10 | -- | 0 |
| ROCKS | Lithothamnion sp. | 80 | -- | 0 |

REMARKS: New survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 001 | 000 | 1 |
| ABALONE | . | 004 | 000 | 000 | 0 |
| ABALONE | . | 005 | 000 | 000 | 0 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 000 | 000 | 0 |
| ABALONE | . | 008 | 000 | 000 | 0 |
| ABALONE | . | 009 | 000 | 000 | 0 |
| ABALONE | . | 010 | 000 | 000 | 0 |
| ABALONE | . | 011 | 000 | 000 | 0 |
| ABALONE | . | 012 | 001 | 000 | 1 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 000 | 000 | 0 |
| ABALONE | . | 015 | 000 | 000 | 0 |
| ABALONE | . | 016 | 000 | 000 | 0 |
| SEA URCHIN (RED) | . | 099 | 000 * | | 0 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 077 DIVER: COG

FISHERIES STATISTICAL: region 0 area 02 sub-area 08

LOCATION: Tanu Island

1987 JUN 13 (PDT) TIME:START: 10:05 FINISH: 10:50

DEPTH FROM DATUM: MAX: 01.7 meters TIDE START: 0.7 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BLD./CBL./GRV./SHL. SLOPE: 00 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 70 | -- | 0 |
| BOTTOM | Cymathere sp. | 50 | Laminaria sp. | 50 |
| TURF | -- | 0 | -- | 0 |
| ROCKS | Lithothamnion sp. | 50 | -- | 0 |

REMARKS: Aborted - Bad Diving Conditions

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 000 | 000 | 0 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 000 | 000 | 0 |

# DIVING STATION LOG

ABALONE RESURVEY
S.E. QUEEN CHARLOTTE ISLANDS 1987

VESSEL: Glory SITE: 078 DIVER: 003

FISHERIES STATISTICAL: region 07 area 02 sub-area 08

LOCATION: Tanu Island

1987 JUN 13 (PDT) TIME:START: 11:15 FINISH: 12:00

DEPTH FROM DATUM: MAX: 02.1 meters TIDE START: 1.9 meters

EXPOSURE: Ground Swell Normal SURVEY DESIGN: 16 quadrats

SUBSTRATE TYPE: BLD./CBL./GRV./SHL. SLOPE: 00 degrees

| | DOMINANT ALGAE SPECIES NAME | %COVER UP TO | SPECIES NAME | %COVER UP TO |
|---|---|---|---|---|
| CANOPY | Nereocystis luetkeana | 50 | -- | 0 |
| BOTTOM | Cymathere sp. | 30 | Laminaria sp. | 20 |
| TURF | Red algae - bladed | 20 | -- | 0 |
| ROCKS | Lithothamnion sp. | 70 | -- | 0 |

REMARKS: New survey site

| SPECIES NAME | DEPTH FROM DATUM | QUADRAT NUMBER | TOTAL SPECIES COUNT | COUNT UNDER ROCKS | COUNT ON ROCKS |
|---|---|---|---|---|---|
| ABALONE | . | 001 | 002 | 000 | 2 |
| ABALONE | . | 002 | 000 | 000 | 0 |
| ABALONE | . | 003 | 000 | 000 | 0 |
| ABALONE | . | 004 | 001 | 000 | 1 |
| ABALONE | . | 005 | 002 | 000 | 2 |
| ABALONE | . | 006 | 000 | 000 | 0 |
| ABALONE | . | 007 | 005 | 000 | 5 |
| ABALONE | . | 008 | 003 | 000 | 3 |
| ABALONE | . | 009 | 002 | 000 | 2 |
| ABALONE | . | 010 | 003 | 000 | 3 |
| ABALONE | . | 011 | 001 | 000 | 1 |
| ABALONE | . | 012 | 001 | 000 | 1 |
| ABALONE | . | 013 | 000 | 000 | 0 |
| ABALONE | . | 014 | 002 | 000 | 2 |
| ABALONE | . | 015 | 001 | 000 | 1 |
| ABALONE | . | 016 | 001 | 000 | 1 |
| SEA URCHIN (RED) | . | 099 | 002 * | | 2 |

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